REVISION HISTORY BG3R CHASSIS

MODEL

KV-AR25M31
KV-AR25M68
KV-AR25M90

PART NO.: 9-872-323-01

NO.	SUFFIX	DATE	SUPP / CORR	DESCRIPTION
1	-01	2002.7	--	1st. Issue

Self Diagnosis
Supported model

SERVICE MANUAL

BG3R CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-AR25M31	RM-995	OCEANIA	SCC-U44G-A
KV-AR25M68	RM-993	THAILAND	SCC-U49R-A
KV-AR25M90	RM-995	HONG KONG	SCC-U50G-A

MODEL	COMMANDER	DEST.	CHASSIS NO.

RM-993

RM-995

TRINITRON ® COLOR TV

SONY ®

SPECIFICATIONS

				Note
Power requirements	220-240 V AC, 50/60 Hz			
Power consumption (W)	Indicated on the rear of the TV			
Television system	B/G, I, D/K, M			
Color system	PAL, PAL 60, SECAM, NTSC3.58, NTSC4.43			
Stereo/Bilingual system	NICAM Stereo / Bilingual B/G, I; A2 Stereo / Bilingual B/G			
Teletext language	English, Arabic, French			KV-AR25M31
Channel coverage				
B/G	VHF: E2 to E12 UHF: E21 to E69 CATV: S01 to S03, S1 to S41			
	VHF: 0 to 12, 5A, 19A UHF: 28 to 69 CATV: S01 to S03, S1 to S41			AUSTRALIA only
	VHF: 1 to 11 UHF: 21 to 69 CATV: S01 to S03, S1 to S41			NEW ZEALAND only
I	UHF: B21 to B68 CATV: S01 to S03, S1 to S41			
D/K	VHF: C1 to C12, R1 to R12 UHF: C13 to C57, R21 to R60 CATV: S01 to S03, S1 to S41, Z1 to Z39			
M	VHF: A2 to A13 UHF: A14 to A79 CATV: A-8 to A-2, A to W+4, W+6 to W+84			
(Antenna)	75-ohm external terminal			
Audio output (Speaker)	8W + 8W			
Number of terminal				
Video	Input: 4*	Output: 1	Phone jacks; 1 Vp-p, 75 ohms	* Three input lines available
♪ Audio	Input: 4*	Output: 1	Phone jacks; 500 mVrms	* Three input lines available
(S Video)	Input : 2		Y: 1 Vp-p, 75 ohms, unbalanced, sync negative C: 0.286 Vp-p, 75 ohms	
(Component Video)	Input : 1		Phono jacks: Y: 1 Vp-p, 75 ohms, sync negative C_B: 0.7 Vp-p, 75 ohms C_R: 0.7 Vp-p, 75 ohms Audio: 500mVrms	
(Headphone)	Output: 1		Stereo minijack	
Picture tube	25 in.			
Tube size (cm)	64			Measured diagonally
Screen size (cm)	60			Measured diagonally
Dimension (w/h/d,mm)	650 × 517 × 496			
Mass (kg)	39			

Design and specifications are subject to change without notice.

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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OPERATING INSTRUCTIONS

SELF DIAGNOSTIC FUNCTION

The units in this manual contain a self-diagnostic function. If an error occurs, the STANDBY/TIMER lamp will automatically begin to flash.
The number of times the lamp flashes translates to a probable source of the problem. A definition of the STANDBY/TIMER lamp flash indicators is listed in the instruction manual for the user's knowledge and reference. If an error symptom cannot be reproduced, the remote commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

1. DIAGNOSTIC TEST INDICATORS

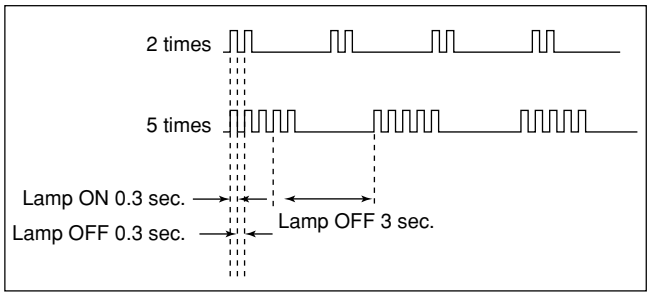
When an errors occurs, the STANDBY/TIMER lamp will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the lamp will identify the first of the problem areas.

Result for all of the following diagnostic items are displayed on screen. No error has occured if the screen displays a "0".

Diagnostic Item Description	No. of times STANDBY/TIMER lamp flashes	Self-diagnostic display/Diagnostic result	Probable Cause Location	Detected Symptoms
• Power does not turn on	Does not light	—	• Power cord is not plugged in. • Fuse is burned out F4601 (F)	• Power does not come on. • No power is supplied to the TV. • AC power supply is faulty.
• +B overcurrent (OCP) or overvoltage (OVP) • Vertical deflection stopped • Horizontal deflection overdrive	2 times	002:000 or 002:001~255 003:001~255 004:001~255 at the same time	• H.OUT Q511 is shorted. (A board) • Q701, Q702, Q703 is shorted (C6 board) • -13V is not supplied. (A board) • IC 503 faulty (A board)	• Power does not come on. • Load on power line is shorted. • Has entered standby state after horizontal raster. • Vertical deflection pulse is stopped. • Power line is shorted or power supply is stopped.
• White balance failure (no PICTURE)	5 times	005:000 or 005:001~225	• G2 is improperly adjusted. (Note 2) • CRT problem. • R(Q703), G(Q702) or B(Q701) out is faulty (C6 board) • IC301 is faulty. (A board) • No connection A board to C6 board.	• No raster is generated. • CRT cathode current detection reference pulse output is small.
• Micro reset	—	101:00 or 101:001~225	• Discharge CRT (C6 Board) • Static discharge • External noise	• Power is shut down shortly, after this return back to normal. • Detect Micro latch up.

Note 1: If a + B overcurrent is detected, stoppage of the vertical deflection is detected simultaneously.
The symptom that is diagnosed first by the microcontroller is displayed on the screen.
Note 2: Refer to screen (G2) Adjustment in section 3-4 of this manual.
* R(Q703), G(Q702) or B(Q701) out is faulty (C6 board).

2. DISPLAY OF STANDBY/TIMER LIGHT FLASH COUNT



Diagnostic Item	Flash Count*
+B overcurrent/overvoltage Vertical deflection stopped	2 times
White balance failure	5 times

* One flash count is not used for self-diagnostic.

3. STOPPING THE STANDBY/TIMER FLASH

Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY/TIMER lamp from flashing.

4. SELF-DIAGNOSTIC SCREEN DIPLAY

For errors with symptoms such as “power sometimes shuts off” or “screen sometimes goes out” that cannot be confirmed, it is possible to bring up past occurances of failure for confirmation on the screen:

[To Bring Up Screen Test]

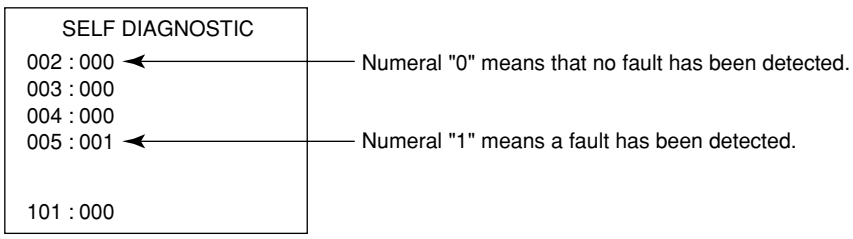
In standby mode, press buttons on the remote commander sequentially in rapid succession as shown below:

Screen display ➡ channel 5 ➡ Sound volume - ➡ Power ON

⇧

Note that this differs from entering the service mode (mode volume +).

Self-Diagnosis screen display


SELF DIAGNOSTIC
002 : 000
003 : 000
004 : 000
005 : 001
101 : 000
Numeral "0" means that no fault has been detected.
Numeral "1" means a fault has been detected.

5. HANDLING OF SELF-DIAGNOSTIC SCREEN DISPLAY

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen during repairs. When you have completed the repairs, clear the result display to “0”.

Unless the result display is cleared to “0”, the self-diagnostic function will not be able to detect subsequent faults after completion of the repairs.

[Clearing the result display]

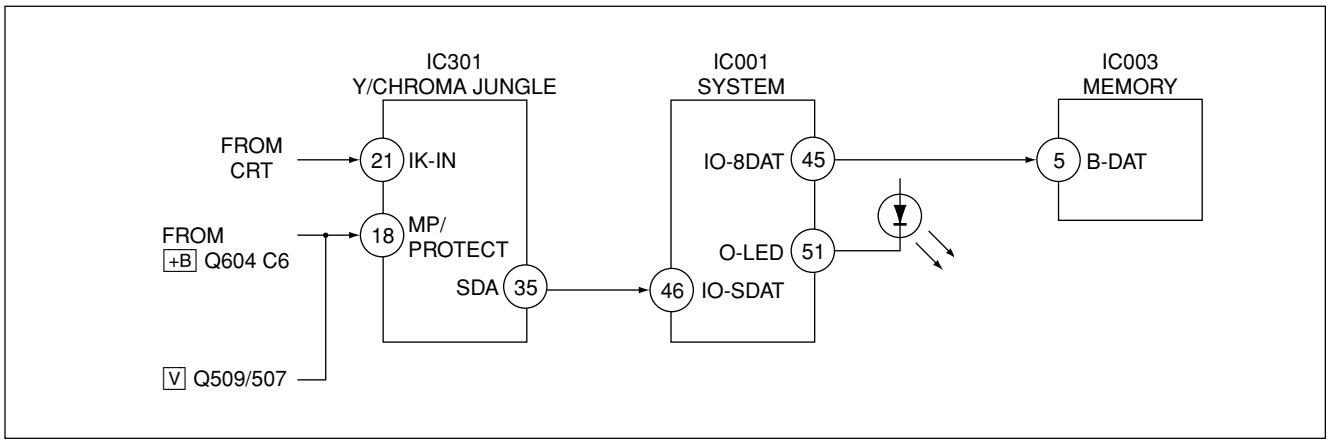
To clear the result display to “0”, press buttons on the remote commander sequentially as shown below when the diagnostic screen is being displayed.

Channel [8] ➡ 0

[Quitting Self-diagnostic screen]

To quit the entire self-diagnostic screen, turn off the power switch on the remote commander or the main unit.

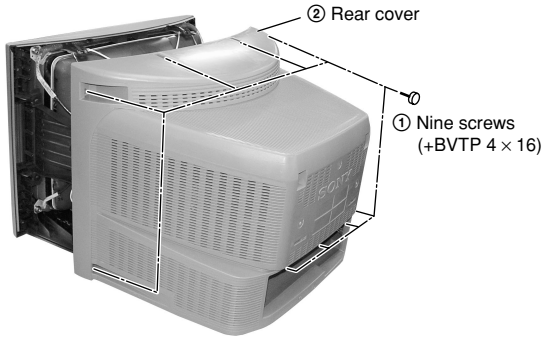
6. SELF-DIANOSTIC CIRCUIT



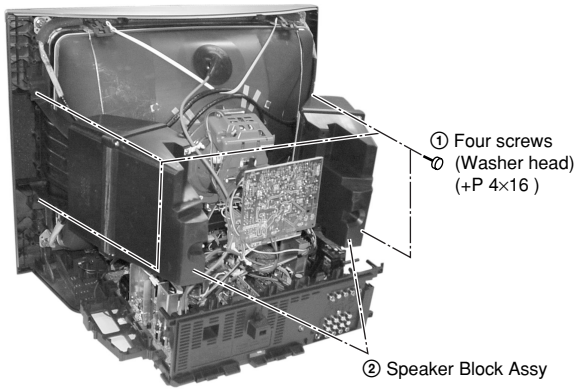
[+B overcurrent OCP]	Occurs when an overcurrent on the +B(135) line is detected by Q604. If Q604 go to ON and the voltage to pin 18 of IC301 should go down when V.SYNC is more than seven verticals in a period, the unit will automatically turn off.
[Vertical deflection stopped]	Occurs when an absence of the vertical deflection pulse is detected by Q509 and IC001 shut down the power supply.
[Vertical deflection overcurrent]	Occurs when an overcurrent on V drive line is detected by Q507. Power supply will be shut down when detect this by IC001.
[White balance failure]	If the RGB levels* do not balance or become low level within 5 seconds, this error will be detected by IC301. TV will stay on, but there will be no picture. * (Refers to the RGB levels of the AKB detection Ref pulse that detects IK.)

SECTION 1
DISASSEMBLY

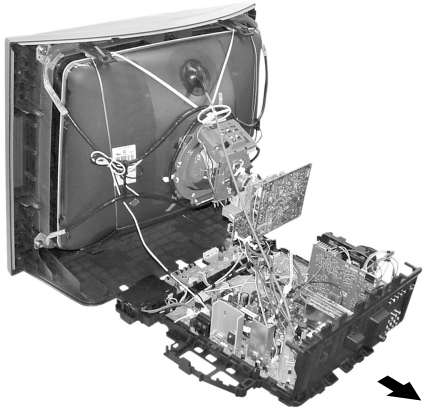
1-1. REAR COVER REMOVAL



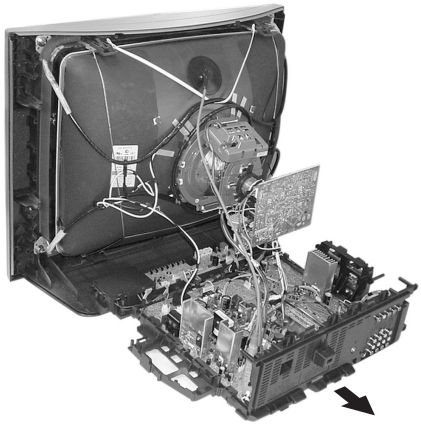
1-2. SPEAKER BLOCK ASSY REMOVAL



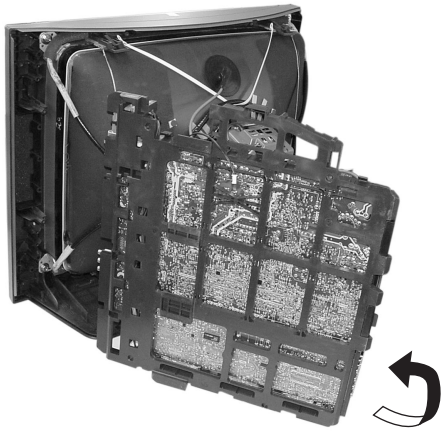
1-3. CHASSIS ASSY REMOVAL (KV-AR25M68)



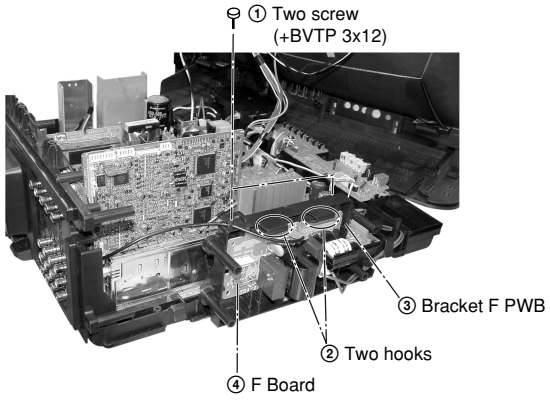
1-4. CHASSIS ASSY REMOVAL (KV-AR25M31/AR25M90)



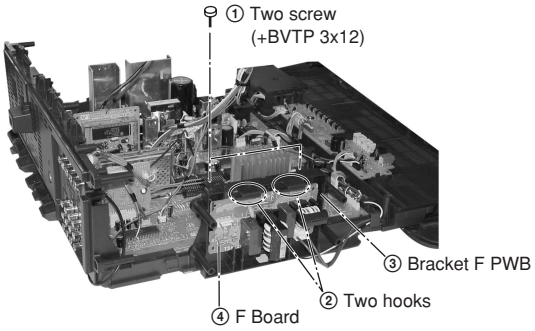
1-5. SERVICE POSITION



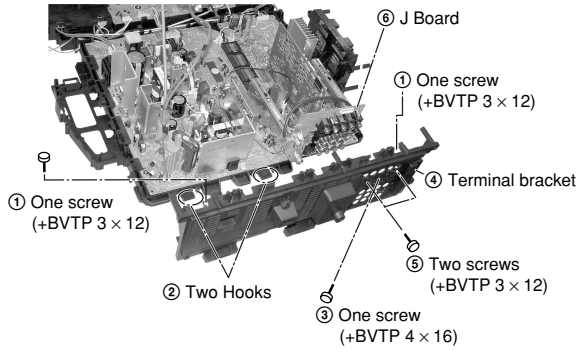
1-6. F BOARD REMOVAL (KV-AR25M68)



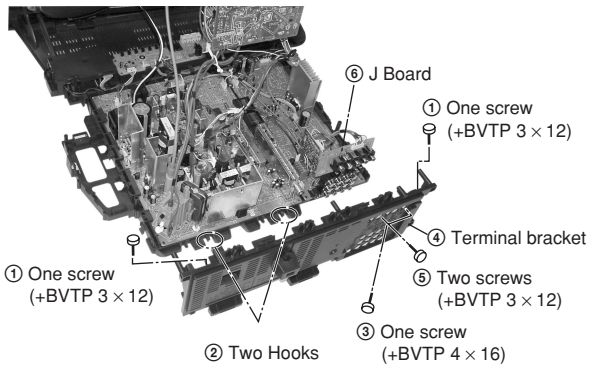
1-7. F BOARD REMOVAL (KV-AR25M31/AR25M90)



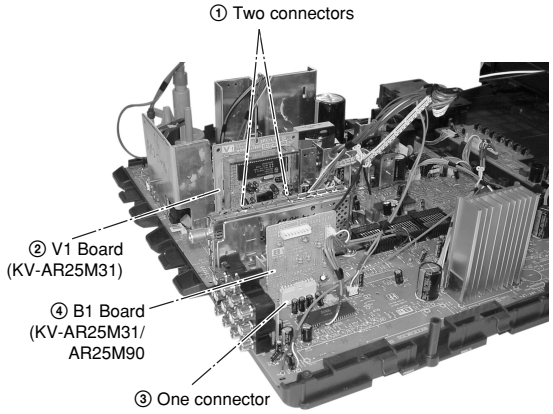
1-8. TERMINAL BRACKET AND J BOARD REMOVAL (KV-AR25M68)



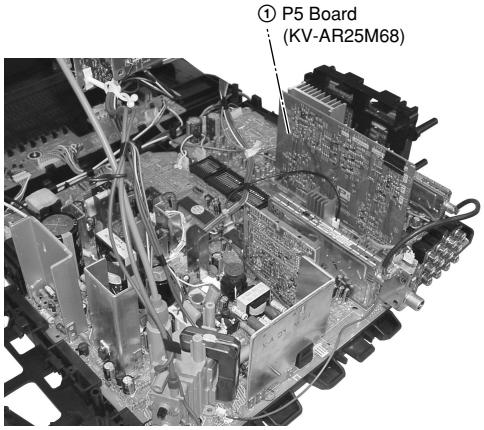
1-9. TERMINAL BRACKET AND J BOARD REMOVAL (KV-AR25M31/AR25M90)



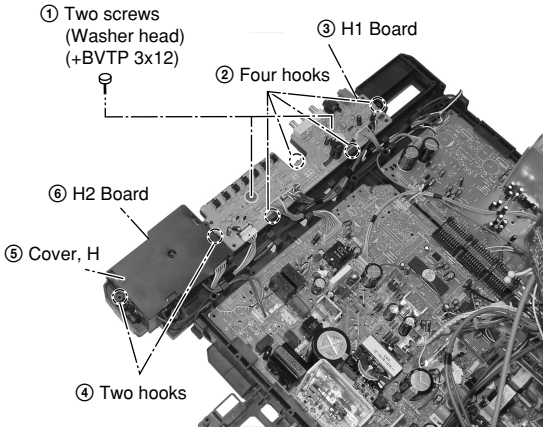
1-10. V1 AND B1 BOARDS REMOVAL



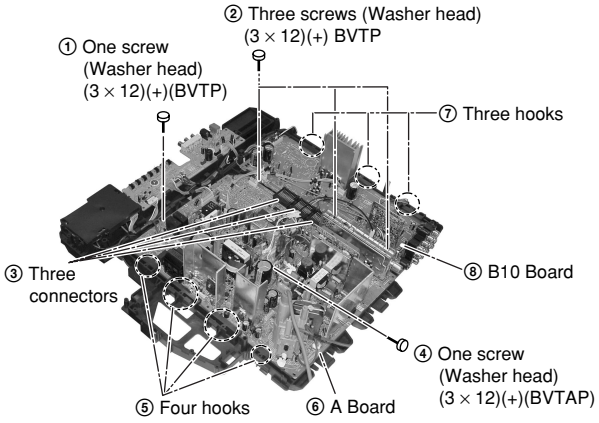
1-11. P5 BOARD REMOVAL



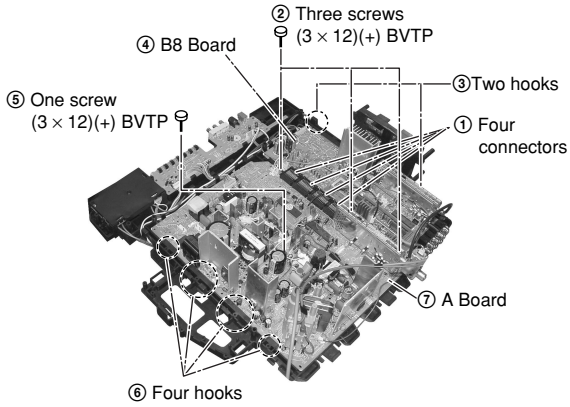
1-12. H1 AND H2 BOARDS REMOVAL



1-13. A AND B10 BOARDS REMOVAL (KV-AR25M68)



1-14. A AND B8 BOARDS REMOVAL (KV-AR25M31/AR25M90)

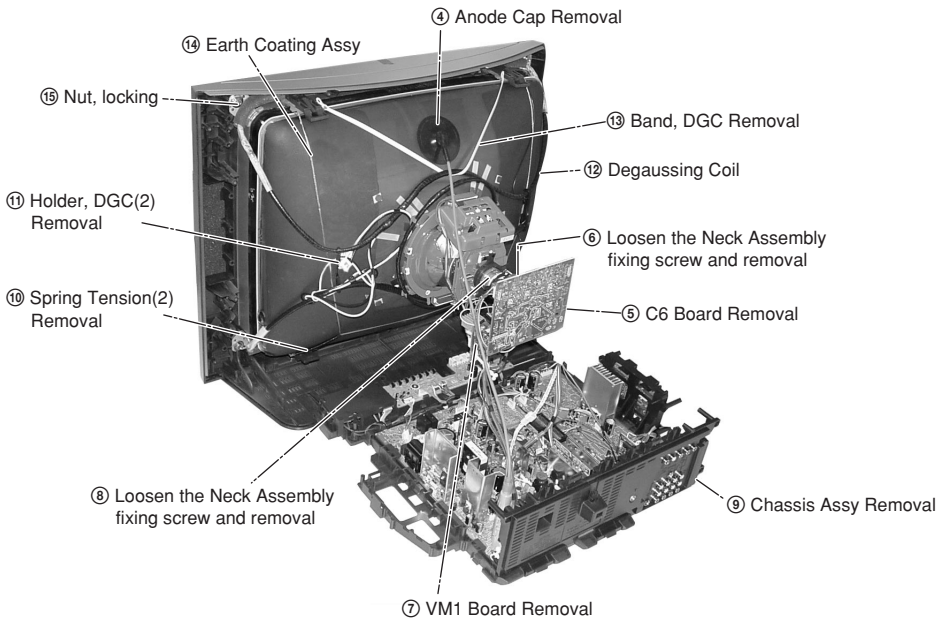


1-15. PICTURE TUBE REMOVAL

Note:

- Please make sure the TV set is not in standing position before removing necessary CRT support located on bottom right and left.

1) Place the TV set with the CRT face down on a cushion jig.
2) Removal the rear cover.
3) Removal the Speaker Block Assy.

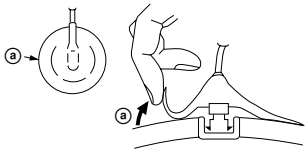


• REMOVAL OF ANODE-CAP

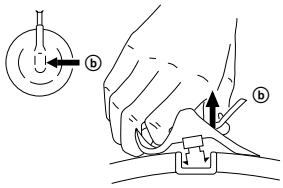
Note:

- After removing the anode, short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT.

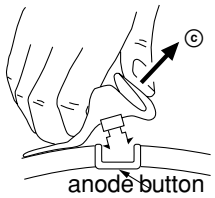
- **REMOVING PROCEDURES**



① **Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.**



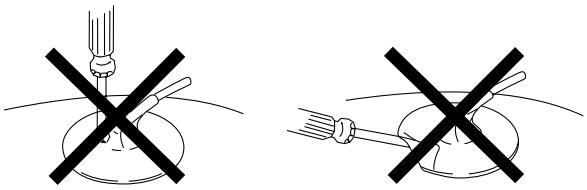
② **Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.**



③ **When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ⓒ.**

- **HOW TO HANDLE AN ANODE-CAP**

① **Do not damage the surface of anode-caps with sharp shaped objects.**
② **Do not press the rubber too hard so as not to damage the inside of anode-cap.**
A metal fitting called the shatter-hook terminal is built into the rubber.
③ **Do not turn the foot of rubber over too hard.**
The shatter-hook terminal will stick out or damage the rubber.



SECTION 2
ADVANCE OPERATION

2-1. "RESET" FUNCTION

1. Purpose

If a customer faces some setting problem that cannot be solved, using the "RESET" function some items will be reset to its original setting (shipment condition)

2. How to Operate

The way to access to the "RESET" Function:-

a) By pressing "MENU" button or "SELECT" button (for non-menu models) on the Front Key Input and hold it down for 5 seconds.

3. Subsequent of Operation

Sequential to the resetting operation (either methods being used in No. 2), TV set would shut down once and automatically turn on again. The power-off duration is expected to be about 500msec. An OSD message, "RESET" tentatively will be displayed for 10 sec after IK status gets stable.
As a result, some items will be reset to an initial condition (shipment condition) wheareas some other remains at the last selection by user.

Items that remains at the last selection by user

Channel No., Favourite CH Setup, PIC rotation, OSD Language, Fine tuning, TV System, Skip

Reset Items

Video input	RF	OSD recall	OFF
Volume	30	Antenna sensitivity	HIGH*
Picture mode	DYNAMIC		(not used for this models)
Wide mode	OFF	Stereo mode	STEREO/NICAM*
Intelligent picture	ON(KV-AR25M31/M90)	Bilingual mode	MAIN*
Sound mode	DYNAMIC	High-deviation mode	AUTO
Surround mode	OFF	Child lock	OFF*
Intelligent Vol	OFF	Game mode	OFF
Multi Picture (PIP)	OFF	Teletext mode	OFF (KV-AR25M31)
	(not used for this models)	Sleep timer	OFF
PIP position	Bottom Right)	Wake-up timer	OFF
	(not used for this models)	Sound muting	OFF

*= only when in RF mode

SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switches should be set as follows unless otherwise noted:
PICTURE control ..... normal
BRIGHTNESS control ..... normal

Perform the adjustments in the following order :

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note : Test Equipment Required.

1. Pattern Generator
2. Degausser
3. Oscilloscope

. . . . . .

Preparation :

- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the set's power and degauss with the degausser.

3-1. BEAM LANDING

1. Input a white signal with the pattern generator.
   Contrast, Brightness } normal
2. Position neck assy as shown in Fig3-2.
3. Set the pattern generator raster signal to a green raster.
4. Move the deflection yoke to the rear and adjust with the purity control so that the green is at the center and the blue and the red take up equally sized areas on each side. (See Figures 3-1 through 3-4.)
5. Move the deflection yoke forward and adjust so that the entire screen is green. (See Figure 3-2.)
6. Switch the raster signal to blue, then to red and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws and DY spacers.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it. (See Figure 3-5.)

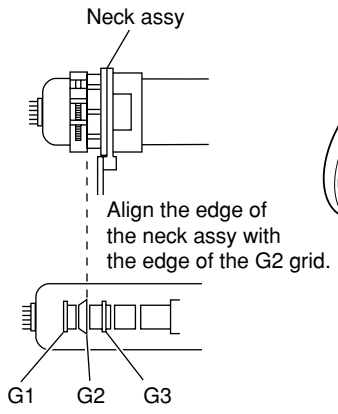


Fig. 3-1

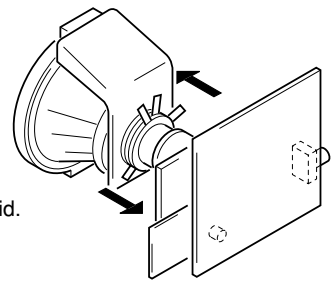


Fig. 3-2

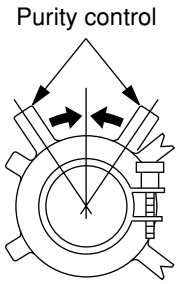


Fig. 3-3

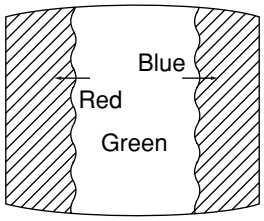


Fig. 3-4

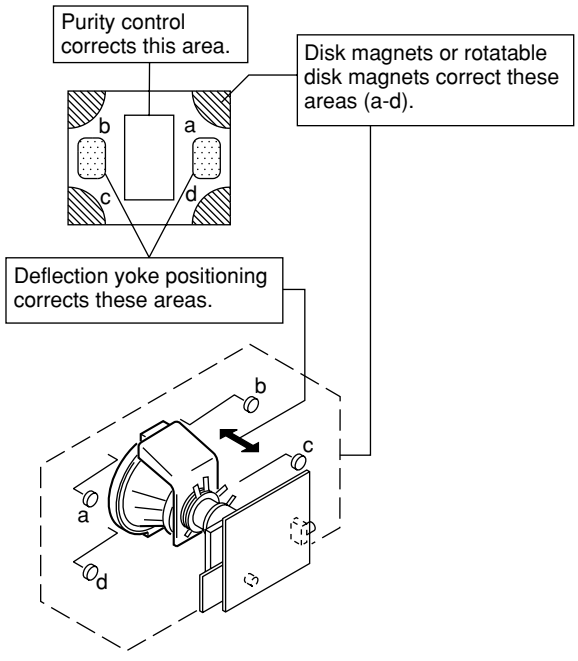


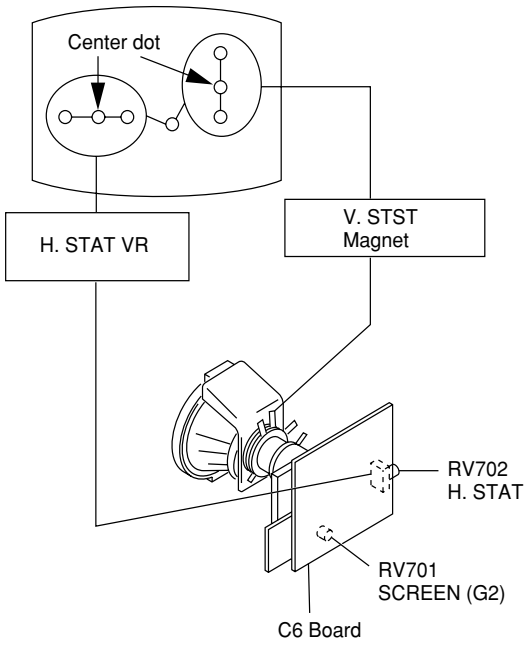
Fig. 3-5

3-2. CONVERGENCE

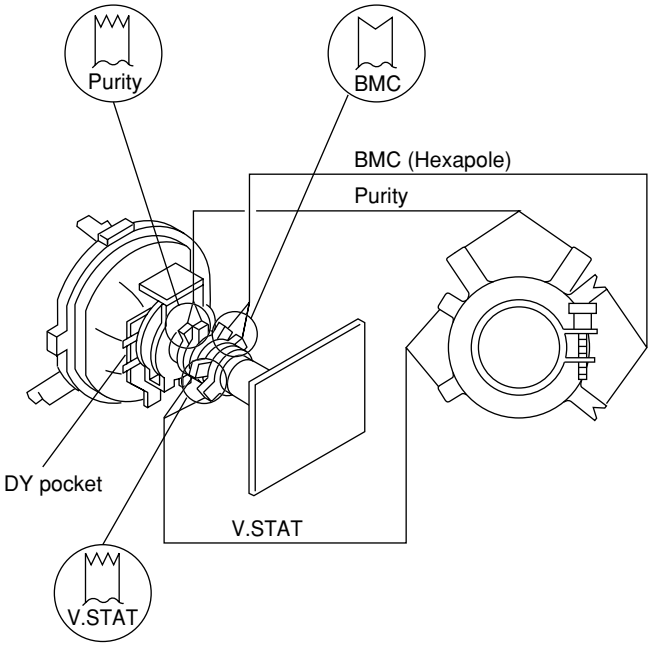
Preparation :

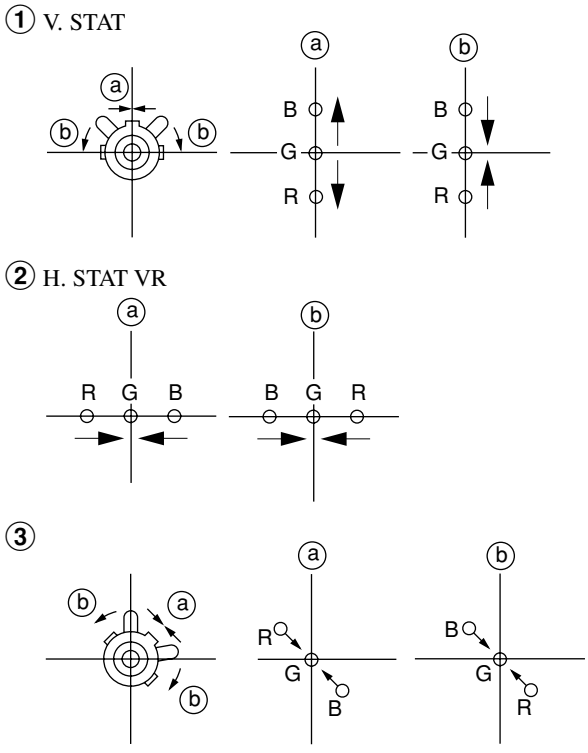
- Before starting this adjustment, adjust the focus, horizontal size and vertical size.
- Receive dot/hatch signal.
- Pic mode: Personal (Pic 90%, Brightness 50%, Colour 50 %, Hue 50%, Sharpness 50%).

(1) Horizontal and Vertical Static Convergence

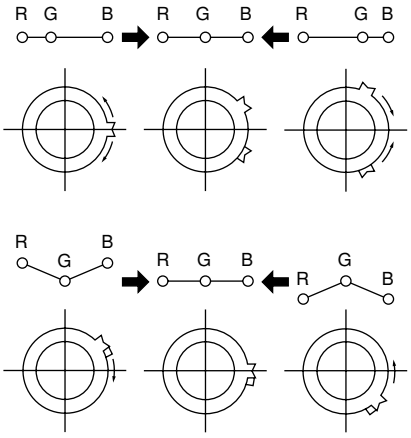


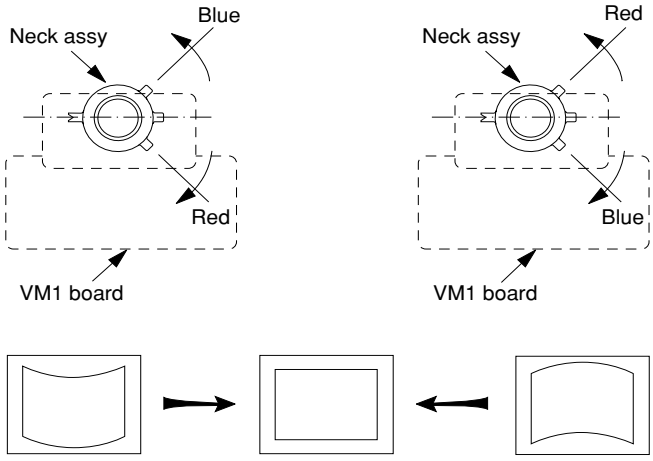
1. (Moving horizontally), adjust the H.STAT control so that the red, green and blue dots are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green and blue dots are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green and blue dots together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V.STAT magnet in the manner given below.
   (In this case, the H.STAT variable resistor and the V.STAT magnet influence each other, so be sure to perform adjustments while tracking.)





④ BMC (Hexapole) Magnet.
If the red, green and blue dots are not balanced or aligned, then use the BMC magnet to adjust in the manner described below.





Note

1. The Red and Blue magnets should be equally far from the horizontal center line.
2. Do not separate the Red and Blue magnets too far. (Less than 8 mm)

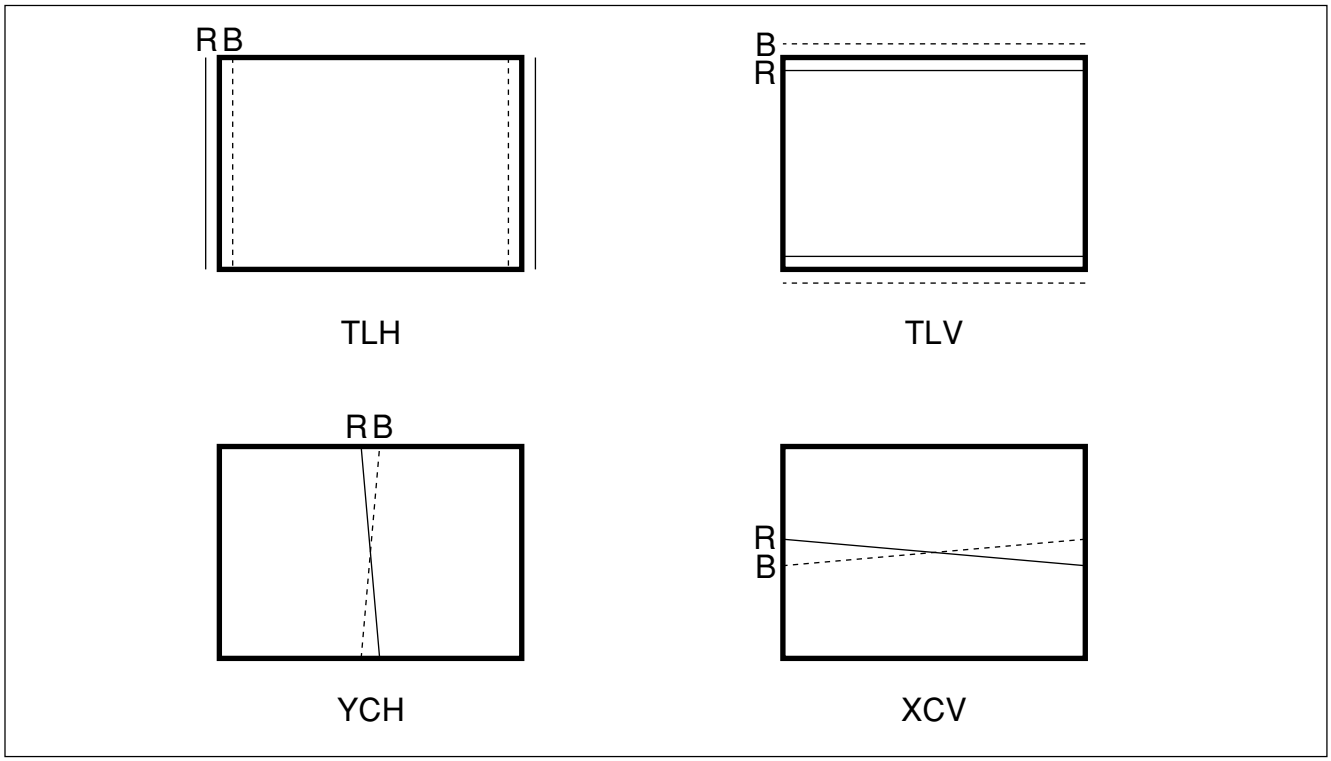
⑤ Y separation axis correction magnet adjustment.

1. Receive the cross-hatch signal and adjust [PICTURE] to [MIN] and [BRIGHTNESS] to [STANDARD] .
2. Adjust the Y separation axis correction magnet on the neck assembly so that the horizontal lines at the top and bottom of the screen are straight.

(2) Dynamic Convergence Adjustment

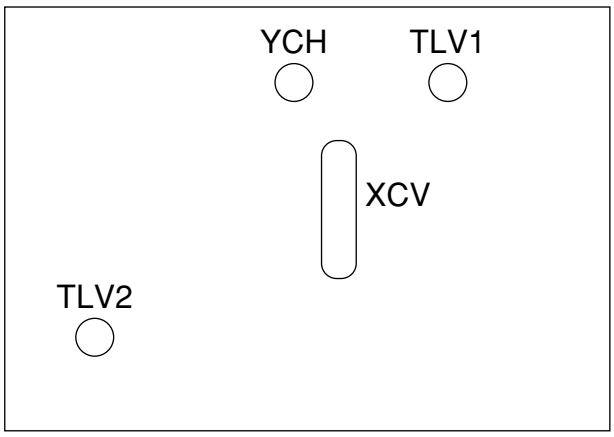
Preparation:

- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence

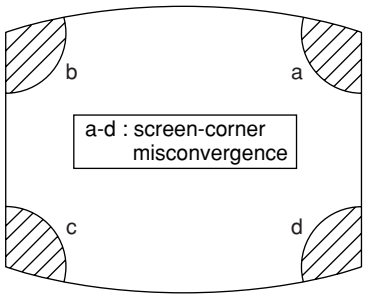


TLV	Rotate	TLV-2	VOL (29”, 34”) on DY
	Rotate	TLV	VOL (25”)
XCV	Rotate	XCV	Adj core on DY
YCH	Rotate	YCH	VOL on DY
TLH	Insert	TLH	Correction Plate to DY Pocket (Left or Right)

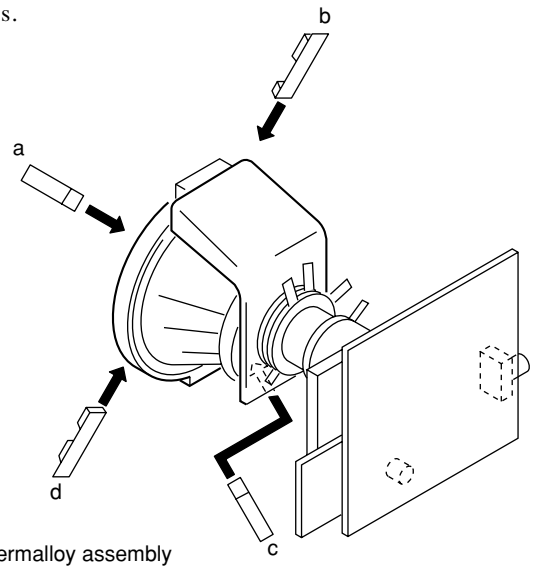
ON DY:



(3) Screen-corner Convergence

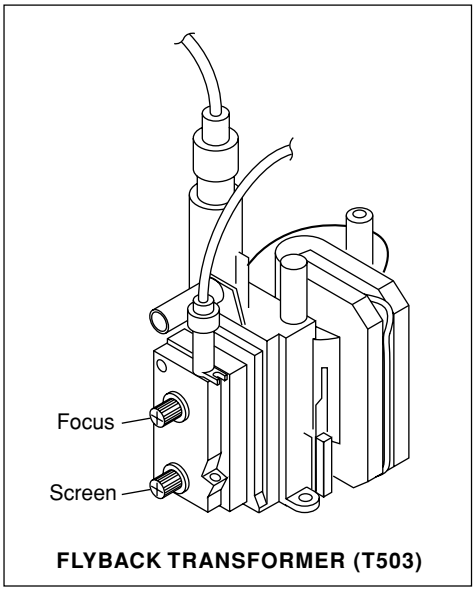


Fix a Permalloy assy corresponding to the misconverged areas.



3-3. FOCUS ADJUSTMENT

FOCUS adjustment should be completed before W/B adjustment.



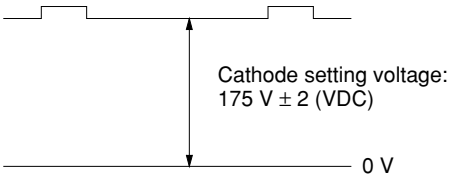
FLYBACK TRANSFORMER (T503)

1. Receive digital monoscope pattern.
2. Set "Picture Mode" to "DYNAMIC".
3. Adjust focus VR so that the lion teeth becomes just focus.
4. Change the receiving signal to white pattern blue back.
5. Confirm Magenta ring is not noticable. Incase magneta ring is obvious, adjust FOCUS VR to take balance of MAGENTA RING and FOCUS.

3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

1. G2 (SCREEN) ADJUSTMENT

1) Set the PICTURE to normal.
2) Put to VIDEO input mode without signals.
3) Connect R, G and B of the C6 board cathode to the oscilloscope.
4) Adjust BRIGHTNESS to obtain the cathode voltage to the value below.
5) Adjust G2 (screen) on the FBT until picture shows the point before cut off.

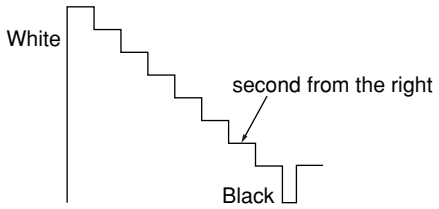


2. WHITE BALANCE ADJUSTMENT

1) Set to Service Mode (Refer Section 4-1: ADJUSTMENTS WITH COMMANDER).
2) Input white raster signal.
3) Set the PICTURE to minimum.
4) Select WHB 04 "GCT" and WHB 05 "BCT" with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
5) Set the PICTURE to maximum.
6) Select WHB 01 "GDR" and WHB 02 "BDR" with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
7) Write into the memory by pressing [MUTING] then [0].

3. SUB BRIGHT ADJUSTMENT

1) Set to service mode.
2) Input a staircase signal of black to white from the pattern generator.
3) BRIGHTNESS .... 50%.
   PICTURE ..... MINIMUM
4) Select WHB 07 "SBR" with [1] and [4], and adjust WHB 07 "SBR" level with [3] and [6] so that the second stripe from the right is dimly lit.



SECTION 4
CIRCUIT ADJUSTMENTS

4-1. ADJUSTMENTS WITH COMMANDER

Service adjustments to this model can be performed using the supplied Remote Commander RM-993 and RM-995.

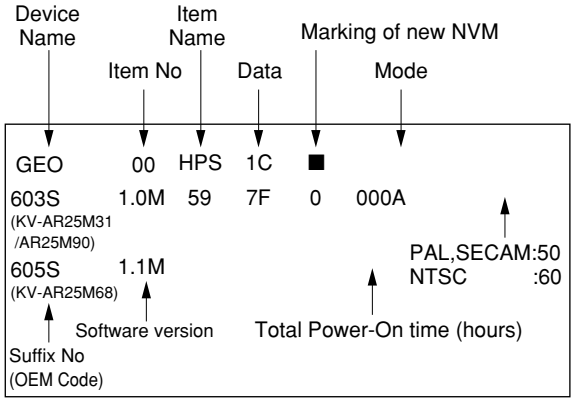
a. ENTERING SERVICE MODE

With the unit on standby

→ [DISPLAY] → [5] → [VOL (+)] → [POWER]

This operation sequence puts the unit into service mode.

The screen display is :



b. METHOD OF CANCELLATION FROM SERVICE MODE

Set the standby condition (Press [POWER] button on the commander), then press [POWER] button again, hereupon it becomes TV mode.

c. METHOD OF WRITE INTO MEMORY

1) Set to Service Mode.
2) Press [1] (UP) and [4] (DOWN), to select the adjustment.
4) Press [MUTING] button to indicate WRITE on the screen.
5) Press [0] button to write into memory.

d. MEMORY WRITE CONFIRMATION METHOD

1) After adjustment, pull out the plug from AC outlet, and then plug into AC outlet again.
2) Turn the power switch ON and set to Service Mode.
3) Call the adjusted items again to confirm adjustments were made.

[1], [4]	Select the adjustment item.
↓	
[3], [6]	Raise/lower the data value.
↓	
[MUTING]	Writes.
↓	
[0]	Executes the writing.

[7], [0]	All the data becomes the values in memory.
[8], [0]	All user control goes to the standard state.
[5], [0]	Service data initialization (Be sure not to use usually.)
[MUTING], [0]	Write 50Hz adjustment data to 60Hz, or vice versa.
[2], [0]	Copy and write all data.

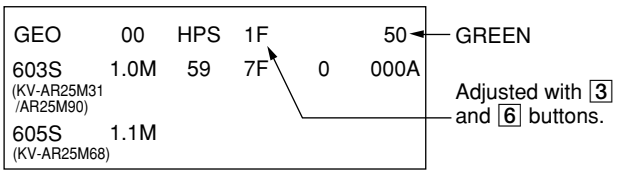
4-2. ADJUSTMENT METHOD

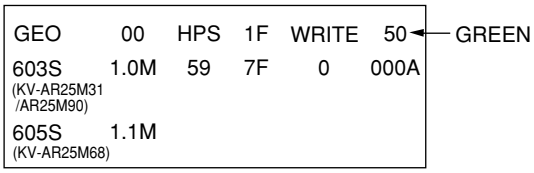
Item Number 00 of device GEO

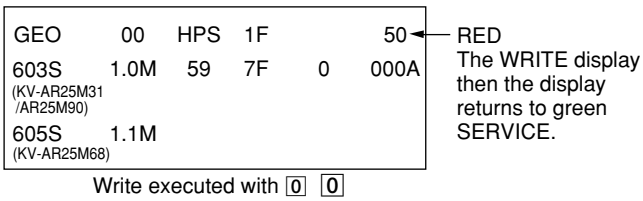
This explanation uses H-Position as an example.

1. Select "GEO 00 HPS" with the [1] and [4] buttons.
2. Raise/lower the data with the [3] and [6] buttons.
3. Select the optimum state. (The standard is 1F for PAL reception.)
4. Write with the [MUTING] button. (The display changes to WRITE.)
5. Execute the writing with the [0] button. (The WRITE display will be changed to red color while excuting, and back to SERVICE.)

Example on screen display :-






GEO 00 HPS 1F 50
603S 1.0M 59 7F 0 000A
(KV-AR25M31 /AR25M90)
605S 1.1M
(KV-AR25M68)
RED
The WRITE display then the display returns to green SERVICE.
Write executed with [0] [0]

Use the same method for all Items. Use [1] and [4] to select the adjustment item, use [3] and [6] to adjust, write with [MUTING], then execute the write with [0].

Note : 1. In [WRITE], the data for all items are written into memory together.
2. For adjustment items that have different standard data between 50Hz or 60Hz, be sure to use the respective input signal after adjustment.

Adjustment Item Table

TVG	Functionality		Function	Table & Note	Device Name	Initial Value (Detailed)					
Category	No	Name				Common	50NC	60NC	50VC	60VC	Soft bsw
GEO	00	HPS	H Position	Normal (50/60)/Wide (50/60)	CXA2159S		12	0A	12	0A	
	01	HSZ	H Size	Normal (50/60)/Wide (50/60)			25	25	25	25	
	02	PAP	Pin Amp	Normal (50/60)/Wide (50/60)			1F	1F	1F	1F	
	03	TLT	Trapezium	Normal (50/60)/Wide (50/60)			07	07	07	07	
	04	VPS	V Position	Normal (50/60)/Wide (50/60)			1F	1F	1F	1F	
	05	VSZ	V Size	Normal (50/60)/Wide (50/60)			0F	0F	07	07	
	06	SCO	S Correction	Normal (50/60)/Wide (50/60)			07	07	07	07	
	07	VLN	V Linearity	Normal (50/60)/Wide (50/60)			07	07	07	07	
	08	BOW	AFC Bow	Normal (50/60)/Wide (50/60)			07	07	07	07	
	09	AGL	AFC Angle	Normal (50/60)/Wide (50/60)			07	07	07	07	
	0A	UPN	Upper Pin	Normal (50/60)/Wide (50/60)			1F	1F	1F	1F	
	0B	LPN	Lower Pin	Normal (50/60)/Wide (50/60)			1F	1F	1F	1F	
	0C	HBL	H Blanking on/off			**01**					
	0D	LBL	Left H Blanking	Normal (50/60)/Wide (50/60)			**0A**	**0F**	**0A**	**0F**	
	0E	RBL	Right H Blanking	Normal (50/60)/Wide (50/60)			**02**	**02**	**02**	**02**	

TVG	Functionality		Function	Table & Note	Device Name	Initial Value (Detailed)				
Category	No	Name				Common	SECAM	Others	Dynamic	Others
WHB	00	RDR	R Drive	DYNAMIC/others	CXA2159S				**25**	**2A**
	01	GDR	G Drive	DYNAMIC/others					25	25
	02	BDR	B Drive	DYNAMIC/others					25	25
	03	RCT	R Cutoff	SECAM/others			**07**	**07**		
	04	GCT	G Cutoff	SECAM/others			07	07		
	05	BCT	B Cutoff	SECAM/others			07	07		
	06	BMN	Brightness Minimum Data			**15**				
	07	SBR	Sub Brightness Control			25				
	08	APB	Sub Bright Control Switch for Intelligent Picture #3			**03**				

TVG	Functionality		Function	Table & Note	Device Name	Initial Value (Detailed)							
Category	No	Name				NC	VC	NTSCNC	OTHERSNC	NTSCVC	OTHERSVC	TV	Video
SAJ	00	PMX	Picture Maximum Data	non-Wide/Wide	CXA2159S	**33**	**2E**						
	01	SHU	Sub Hue Control	TV/Video								07	07
	02	SSH	Sub Sharpness Control	TV/Wide								**05**	**09**
	03	SCL	Sub Color Control	(NTSC/others)/WIDE(NTSC/others)				23	21	20	1E		

TVG	Functionality		Function	Table & Note	Device Name	Initial Value (Detailed)								
Category	No	Name				Common	50NC	60NC	50VC	60VC	NTSC NON-STD	OTHERS NON-STD	NTSC STD	OTHERS STD
VP	00	EHT	EHT Comp	Normal(50/60)/Wide(50/60)	CXA2159S		**02**	**02**	**02**	**02**				
	01	GMA	Gamma Correction (separated in STANDARD mode)	NON-STD.(NTSC/others)/STD.(NTSC/others)							**02**	**02**	**01**	**01**
	02	APG	Gamma Control Switch for Intelligent Picture #3	NON-STD.(NTSC/others)/STD.(NTSC/others)							**00**	**00**	**00**	**00**

TVG	Functionality		Function	Table & Note	Initial Value (Detailed)					
Category	No	Name			Common	SECAM	NTSC	PAL	DVD	TEXT
VP	03	YDL	Y Delay	PAL/SECAM/NTSC/DVD		**09**	**08**	**06**	**08**	
	04	SST	SECAM ID Start Position	SECAM&ATUTO/FORCED-PAL&NTSC		**01**		**01**		
	05	SSP	SECAM ID Stop Position	SECAM&ATUTO/FORCED-PAL&NTSC		**01**		**01**		
	06	RLM	RGB Limit		**00**					
	07	SLV	SECAM ID Level	SECAM&ATUTO/FORCED-PAL&NTSC		**02**		**02**		
	08	SBF	SECAM BELL for	SECAM&ATUTO/FORCED-PAL&NTSC		**22**		**22**		

TVG	Functionality		Function	Table & Note	Initial Value (Detailed)					
Category	No	Name			Common	NTSC	Others	TV	Video	TEXT
VP	09	DYC	Dynamic Color on/off		**01**					
	0A	ABL	ABL Mode Switching (except STANDARD mode)	except STANDARD	**01**					
	0B	VTH	ABL Detection Vth Switching		**01**					
	0C	SF0	FO Switching for Sharpness	NTSC/others		**01**	**01**			
	0D	DCX	DC Trans. Ratio Switching		**01**					
	0E	SHT	Pre-/Overshoot ratio Switch	NTSC/others		**01**	**01**			
	0F	HDW	H Drive Pulse Width Switch		**00**					
	10	AFC	AFC Gain Control	TV/Video/Text				**01**	**00**	**01**
	11	HOS	H Oscillation		07					
	12	HSS	Slice Level of H Sync Sep.		**00**					
	13	VSS	Slice Level of V Sync Sep.		**00**					

TVG	Functionality		Function	Table & Note	Initial Value (Detailed)								
Category	No	Name			Common	50NC	60NC	50VC	60VC	NTSCNC	OTHERSNC	NTSCVC	OTHERSVC
VP	14	HMS	Macro Vision C/m off/on	Normal(50/60)/Wide(50/60)		**01**	**01**	**01**	**01**				
	15	YUV	Y SEL		**00**								
	16	CDV	CD mode for Video and RF under no signal	video only	**01**								
	17	RON	R ON	not memorized	**01**								
	18	GON	G ON	not memorized	**01**								
	19	BON	B ON	not memorized	**01**								
	1A	PON	P ON	not memorized	**01**								
	1B	AXN	AXIS SW	(NTSC/others)/Wide(NTSC/others)[only DYNA]						**01**	**01**	**01**	**01**
	1C	RSL	RGB SEL		**00**								
	1D	VBW	VBLKW		**00**								
	1E	RFP	REFP		**00**								
	1F	VMC	VM Level		**00**								
	20	CBF	Chroma Bandpass Filter		**01**								
	21	CTO	Chroma Trap Off		**01**								

TVG	Functionality		Function	Table & Note	Initial Value (Detailed)						
Category	No	Name			Common	Dynamic	Standard/Drama	Hi-Fine/Soft	Dyna bsw	Drama bsw	Soft bsw
AP2	00	BBS	Bass Boost Level Setting		**03**						
	01	BCB	Boost cut select for Sub Bass Control		**00**						
	02	SBS	Sub Bass Level Setting		**00**						
	03	BCT	Boost cut select for Sub Treble Control		**00**						
	04	STS	Sub Treble Level Setting		**00**						
	05	AGL	AGC Level Setting		**00**						
	06	BSW	Bass Boost ON/OFF Switch		**00**						
	07	BAS	Bass sound mode Control	{BSW:1/0} * {dyna/drama/soft}		**13**	**01**	**01**	11	03	03
	08	TRE	Treble sound mode Control	{BSW:1/0} * {dyna/drama/soft}		**01**	**01**	**07**	14	14	02
	09	BBE	BBE Sound mode Control	{BSW:1/0} * {dyna/drama/soft}		**90**	**7F**	**00**	89	6C	00

TVG	Functionality		Function	Table & Note	Device Name	Initial Value (Detailed)
Category	No	Name				Common
MSP	00	WST	W/G Stereo Threshold		MSP3415D	**15**
	01	WBT	W/G Bilingual Threshold			**EC**
	02	WLL	W/G Monaural Threshold			**05**
	03	WAC	W/G Agreement Count			**01**
	04	WDL	W/G Search Delay			**30**
	05	NDL	NICAM Search Delay			**20**
	06	SDL	Stereo status Read Delay			**10**
	07	AGC	AGC Switch Auto/Constant			**01**
	08	REL	AGC Gain at Constant Mode			**28**
	09	CRM	Carrier muting on/off			**00**
	0A	ACO	Audio Clock out on/off			**01**
	0B	FP	FM Prescale for non-M system			**1B**
	0C	FPM	FM Prescale for M system			**32**
	0D	FH	FM Prescale for HDEV			**36**
	0E	FHM	FM Prescale for HDEV and M			**65**
	0F	WGP	W/G Prescale			**1C**
	10	NIP	NICAM Prescale			**7F**
	11	ERR	Auto FM switch Threshold			**50**
	12	VOL	Loud Speaker gain 7000h to 7ff0h			**6D**

TVG	Functionality		Function	Device Name	Initial Value (Detailed)
Category	No	Name			Common
PIP	00	PRO	Progreeive Scan Mode Enable	SDA9288X	00
	01	RED	Read Double Mode		00
	02	FEI	Field Select		00
	03	HPS	Horizontal Picture Position		33
	04	VPS	Vertical Picture Position		1B
	05	HFP	Horizontal Fine Positioning		08
	06	VFP	Vertical Fine Positioning		00
	07	DIS	Display standard		00
	08	HOS	Horizontal Size		00
	09	VES	Vertical Size		00
	0A	FPS	Force Parent Standard		00
	0B	HZM	Horizontal Zoom		00
	0C	VSP	Vertical Sync Pule Noise Reduction		01
	0D	VDL	Vertical Sync Pulse Delay		00
	0E	FRH	Frame Width Horizontal		05
	0F	FWV	Frame Width Vertical		02
	10	VRD	Reduction		00
	11	VBK	Vertical Blanking		00
	12	DLY	Select Delay		01
	13	PCR	Position Correction		00
	14	AGM	AGC Mode		03
	15	AGC	Automatic Gain Control Value		09
	16	CVB	CVBS Select		00
	17	CPD	CLAMPING Duration		01
	18	CPT	CLAMPING Pulse start		01
	19	LUM	Luminance offset		00

TVG	Functionality		Function	Table & Note	Initial Value (Detailed)					
Category	No	Name			SECAM	NTSC	PAL	TV	Video	DVD
PIP	1A	PLL	Insert PLL Time Constant	TV/Video				00	00	
	1B	YCD	Y/C Delay	PAL/SECAM/NTSC/DVD	08	08	08			08
	1C	NSR	Noise Reduction for inset PII	TV/Video				00	00	

TVG	Functionality		Function	Table & Note	Initial Value (Detailed)		
Category	No	Name			Common	50	60
PIP	1D	LSP	Standard Identification Speed		00		
	1E	KIL	Color Killer Threshold		02		
	1F	BGP	Burst Gate Position		01		
	20	SEC	SECAM Identification Level		01		
	21	DEM	Deemphasw selection		01		
	22	CMA	Chroma Bandwith		00		
	23	IFC	IF Compensation Filter		02		
	24	HUE	Hue		00		
	25	SCA	Color Subcarrier Adjustment		06		
	26	CON	Contrast Adjustment		00		
	27	BLR	Blanking Level Red Channel		00		
	28	BRT	Brightness Adjustment		03		
	29	BLG	Blanking Level Green Channel		00		
	2A	BIR	Blanking Inversion Red Channel		00		
	2B	BIB	Blanking Inversion Blue Channel		00		
	2C	BLB	Blanking Level Blue Channel		00		
	2D	INT	Refresh Interval		00		
	2E	PKR	Peak Level Red Channel		85		
	2F	PKG	Peak Level Green Channel		85		
	30	PKB	Peak Level Blue Channel		85		
	31	FRY	Frame Color Y		09		
	32	OUT	Output Format		01		
	33	FRU	Frame Color U		00		
	34	FRV	Frame Color V		00		
	35	SAT	Color Saturation Adjustment		09		
	36	YPK	Y Peak Adjustment		03		
	37	YCO	Y Coring Enable		01		
	38	PAL	PAL ID Level		03		
	39	POV	Position Offset Vertical		00		
	3A	POH	Position Offset Horizontal		00		
	3B	VSH	Vertical Shrink		00		
	3C	HSH	H Shrink		00		
	3D	CPL	CLAMPING Pulse Length		01		

TVG	Functionality		Function	Table & Note	Device Name	Initial Value (Detailed)			
Category	No	Name				COMMON	S-INPUT	TV	VIDEO
YCT	00	SHU	Sub Hue Adjustment	TV/Video	CXA2163AQ			0E	12
	01	PNG	PAL/NTSC Gate Width			**01**			
	02	PNI	PAL/NTSC Sensitivity SW			**00**			

TVG	Functionality		Function	Table & Note	Initial Value (Detailed)						
Category	No	Name			COMMON	50TV	50VIDEO	50DVD	60TV	60VIDEO	60DVD
YCT	03	SCL	Sub Color Control	50/60*TV/Video		**05**	**07**		**05**	**07**	
	04	SCT	Sub Contrast Control	50-60*TV/Video		**05**	**08**		**05**	**08**	
	05	SF0	Sharpness Center Frequency Changing		**02**						
	06	SEQ	Sharpness Equalizer Characteristic		**03**						
	07	SHG	Sharpness Gain Control	50/60*TV/Video/DVD		**06**	**07**	**09**	**06**	**07**	**09**
	08	YOL	Y-output Level Control		21						
	09	BSP	Black Stretch Start Point Changing		**00**						

TVG	Functionality		Function	Table & Note	Initial Value (Detailed)					
Category	No	Name			COMMON	S-INPUT	TV	VIDEO	DVD	OTHERS
YCT	0A	COL	Cb/Cr Output Level Control	DVD/others					**27**	**1E**
	0B	DCR	DC Restoration Ratio Adjustment		**00**					
	0C	BF0	BPF/TQF F0 Adjustment		**01**					
	0D	BFQ	BPF/TQF Q Adjustment		**02**					
	0E	FSW	BPF/TQF Switch		**01**					
	0F	SDT	SECAM Double Trap Switch		**01**					
	10	LPF	Y/Cb/Cr LPF Switch		**01**					
	11	YDL	Y-DL Time Adjustment	TV/Video/S-input/DVD		**05**	**06**	**05**	**05**	
	12	CMT	Cb/Cr Output Mute Switch		**00**					
	13	B01	Cb Offset1 Adjustment (main route)		**07**					
	14	RO1	Cr Offset1 Adjustment		**07**					
	15	CDF	V Count Down Frequency Switch	forced 50Hz for no signal	**00**					
	16	CDM	V Count Down Judge Switch		**00**					
	17	AFC	AFC Sensitivity Switch	(TV/)Video/DVD				**00**	**00**	
	18	MVM	Macrovision Mask + AFC Mask		**01**					
	19	SRY	SECAM R-Y Black Adjustment		**07**					
	1A	SBY	SECAM B-Y Black Adjustment		**01**					
	1B	BEL	SECAM BELL/HPF Switching		**02**					
	1C	BLF	BELL f0 Adjustment		**00**					
	1D	SVI	SECAM V-ID Switch		**00**					
	1E	SGP	SECAM Gate Position Adjustment		**00**					
	1F	SID	SECAM Sensitivity Switch	except SECAM	**01**					
	20	SIH	SECAM Inhibition Switch		**00**					
	21	STP	Y Black Level Setup for PAL plus		**00**					
	22	ASW	Auto Video Select Mode SW		**01**					
	23	WSH	Sharpness Gain Step for noise reduction		**00**					
	24	WCO	Cb/Cr Output Level Step for noise reduction		**00**					
	25	CB2	Cb2 offset adjustment (YCbCr2 input)		**07**					
	26	CR2	Cr2 offset adjustment (YCbCr2 input)		**07**					
	27	HPH	HS Output phase switch		**00**					
	28	VPH	Switch for VP output phase		**00**					
	29	NCM	NTSC COMB		**00**					

TVG	Functionality		Function	Table & Note	Device Name	Initial Value (Detailed)		
Category	No	Name				COMMON	NTSC	OTHERS
TE	00	NR0	NR	NTSC/Others	DTE		**01**	**01**
	01	TC0	TE Coring	NTSC/Others			**05**	**05**
	02	TG0	TE Gain	NTSC/Others			**05**	**05**
	03	STH	Forced TE bypass 1:TE bypass			**00**		
	04	COF	Color Component OFF 1:OFF (512)			**00**		
	05	YOF	Luminance Component OFF 1:OFF			**00**		
	06	VJR	V jitter control 0:ON 1:SP1 2:SP2 3:SP2			**00**		
	07	TOF	TE OFF 1:TE OFF			**00**		
	08	DOF	Dot NR OFF 1:Dot NR OFF			**00**		
	09	FOF	TE LPF OFF 1:LPF OFF			**01**		
	0A	CTH	Color TE OFF 1:OFF			**00**		
	0B	PSL	TE Parameter Selection			**02**		
	0C	CLP	Input Clamp Level			**08**		
	0D	CL2	Output Clamp Level			**00**		
	0E	LA1	Level depend Gain (+, White)			**00**		
	0F	LA2	Level depend Gain (+, Black)			**01**		
	10	LA3	Level depend Gain (-, White)			**0F**		
	11	LA4	Level depend Gain (-, Black)			**01**		
	12	CRW	TE Y/C compensation ratio			**04**		
	13	YCD	TE Y/C output delay adjustment			**04**		
NR	00	DMO	NR Demo Mode ON/OFF (1=Demo Mode)		DTE	**00**		
	01	THV	Offset of Noise Threshold level for vertical direction			**03**		
	02	THH	Offset of level Threshold level for horizontal direction			**11**		
	03	BLL	Offset of Level detection for Black Level			**07**		
	04	CST	Offset of Level detection for Color Level			**07**		
	05	THC	Offset of Edge Detection Threshold			**09**		
	06	NRF	NR0 always Rank = 0			**00**		
	07	DIG	A/D In or Digital In (1=Digital In)			**00**		
TXT	00	TXH	Teletext Horizontal Position		SAA5261	**00**		
	01	TXV	Teletext Vertical Position			**00**		

TVG	Functionality		Function	Table & Note	Device Name	Initial Value (Detailed)		
Category	No	Name				COMMON	NTSC	Others
OPM	00	OSH	OSD H Position	Option - Misc	CXP750097	0F		
	01	COM	Selection (0: None, 1:NTSC, 2:Multi, 3:3D) [NON-DTE]/(0:None, 1:Multi, 2:3D, 3: None)[DTE]			**02**		
	02	APC	APC Switch			**01**		
	03	TSY	TV Sys at Auto TV Sys			**00**		
	04	MUT	No Signal Mute			**00**		
	05	AFM	Auto FM switch			**01**		
	06	RFB	C-BPF Control			**00**		
	07	TVO	Tilt to V-Angle offset			**01**		
	08	DBL	Disable Blueback Function			**00**		
	09	SSO	Speed Search Option (0: Off, 1: 4x, 2: 6x, 3:8x)			**01**		
	0A	SCH	CH Selection for Shipping Condition	NTSC Models only		**01**		
	0B	SCA	Cable/Air selection for shipping condition	NTSC Models only		**01**		
	0C	POR	Power On Reset Dectection From YCT			**00**		
	0D	NRC	N-Det Counter for PICSI			**1F**		
	0E	RUC	RF Signal Change Counter after Unlocked			**04**		
	0F	RLC	RF Signal Change Counter after Locked			**01**		
	10	BYP	DTE ON/OFF Blanking			**00**		
OPB	00	OP1	Optional Bits 1 (see page 28)	Option - Bits	CXP750097	**EF**		
	01	OP2	Optional Bits 2 (see page 28)			**67**		
	02	OP3	Optional Bits 3 (see page 28)			**F1**		
	03	OP4	Optional Bits 4 (see page 28)			**97**		

NOTE

- shaded items are fixed data.
- Standard data listed on the Adjustment Item Table are reference values, therefore it may be different for each model and for each mode.
- Note for Different Data Those are the standard data values written on the microprocessor. Therefore, the data values of the modes and stored respectively in the memory. In case of a device replacement, adjustment by rewriting the data value is necessary for some items.

ITEM INFORMATION

No. OPB0 OP1

Item	XTAL 4.43	XTAL 3.58	SECAM	AR34/29*	B/G	I	D/K	M	HEX
KV-AR25M31	1	1	1	0	1	1	1	1	EF
KV-AR25M68	1	1	1	0	1	1	1	1	EF
KV-AR25M90	1	1	1	0	1	1	1	1	EF

AR34/29* SHG offset in YCT 0 = AR29/25, 1 = AR34

APPLICABLE FOR XF-L (21" & 14") MODELS ONLY!

No. OPB1 OP2

Item	TOP	NICAM	HDEV	Thai Bil	PIP 4	DVD Input	AV Input		HEX
KV-AR25M31	1	1	1	0	0	1	1	1	EF
KV-AR25M68	0	1	1	0	0	1	1	1	67
KV-AR25M90	0	1	1	0	0	1	1	1	67

AV Input	00 = no AV Input	01 = 1 AV Input
	10 = 2 AV Input	11 = 3 AV Input
DVD Input	Effective only when "AV Input" is set to 3 AV Input	
PIP 4	PIP 4	0 = disabled, 1 = enabled

No. OPB2 OP3

Item	Initial menu	AP2	Auto PIC	A-TVsys	US ST	DTE	Forced 50/60	Colour SW*2	HEX
KV-AR25M31	1	1	1	1	0	0	0	1	F1
KV-AR25M68	1	1	1	1	0	1	0	1	F5
	1	1	1	1	0	0	0	1	F1

Initial Menu	Initial Menu Setup	0 = disabled, 1 = enabled
AP2	Auto Processor Selection	0 = AP, 1 = AP2.
Auto PIC*3	Auto Picture Improvement	0 = off PNC1/PNC2
		1 = activate PNC1/PNC2
A-TVsys	Auto TV System in Auto Program	0 = disabled, 1 = enabled
US ST*	USA Stereo	0 = disabled, 1 = enabled
DTE	DTE Model Selection	0 = Non DTE, 1 = DTE
Forced 50/60	Forced to 50/60 Hz during no signal condition 0=60Hz, 1=50Hz	
Color SW*2	Color Data Selection in Dynamic Mode	0 = 65 (No PIP), 1 = 57 (PIP)

Note: *1 - For XA21/XH29 Models Only
*2 - For XA34/29/25 Models Only
*3 - For PNC3, the enables are from service item APG and APB.

No. OPB3 *OP4

Item	PNC2	Korean ST	Vid NTSC3.58	Wide	Video3	Chinese(multi mdl)	Arabic/C.Chinese	Thai/Korean	HEX
KV-AR25M31	1	0	0	1	0	1	1	1	97
KV-AR25M68	0	0	0	1	0	1	1	1	17
KV-AR25M90	1	0	0	1	0	1	1	1	97

APPLICABLE TO XS ONLY - Sub Language Selection (Bit 0 - Bit 2)

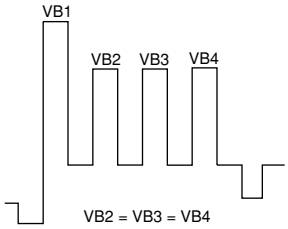
Korean Stereo*	Korean Stereo	0 = disabled, 1 = enabled
PNC2*2	Enable switch of PNC2	0 = disable, 1 = enable
Video NTSC3.58*	Video Color System	0 = Multi System, 1 = Single System (NTSC3.58)
Wide	Enable wide mode	0 = disable, 1 = enable

Note : *APPLICABLE FOR NTSC MODELS ONLY

4-3. ADJUSTMENT FOR NON DIGITAL TEXTURE ENHANCER (DTE) MODEL (KV-AR25M31/AR25M90)

SUB COLOR ADJUSTMENT

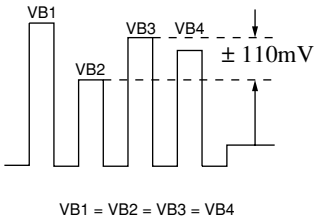
1. Select Video.
2. Input PAL Color Bar
3. Set to following condition PICTURE 100%, BRIGHTNESS 50%, Color 50%.
4. Connect an oscilloscope to pin ① (BOUT) of CN305, A Board.
5. Set the service mode and select SAJ 3 'SCL' with [1] and [4] of the commander then adjust the VB2=VB3=VB4 [3] and [6].
6. Press [MUTING] → [0] of the commander to write the data.
7. Input NTSC Color Bar to set and repeat items (3 to 7).
8. Select "WIDE" mode, write the "SAME DATA- 3 STEPS" for both PAL and NTSC Color Bar input.



VB2 = VB3 = VB4 (FOR PAL SUB COLOR ADJUSTMENT)
(Difference is within 70mV)
VB1 = VB4 (FOR NTSC SUB COLOR ADJUSTMENT)
(Difference is within 70mV)

SUB HUE ADJUSTMENT

1. Select Video 1.
2. Input a NTSC 3.58 color-bar, video into Video 1.
3. Set the following condition:
   PICTURE 100%, BRIGHTNESS 50%, COLOR 50%
4. Connect an oscilloscope to pin ① (B OUT) of CN305, A board.
5. Select SAJ 1 "SHU" with [1] and [4] of the commander by setting to Service Mode and adjust to VB1=VB2=VB3=VB4 with [3] and [6].



The highest level of VB1,VB2,VB3,VB4 must be aligned at the same line.
Ideal difference level between VB2 and VB3 should be within ± 110mV.

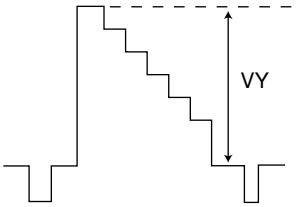
6. Press [MUTING] → [0] of the commander to write the data.
7. Adjust SAJ 1 "SHU" as step 3 to 6 when receiving TV mode.

4-4. ADJUSTMENT FOR DIGITAL TEXTURE ENHANCER (DTE) MODEL (KV-AR25M68)

Y LEVEL ADJUSTMENT

1. Select Video.
2. Input PAL Color Bar to TV set (white reference 100%).
3. Set the following condition:
   DTE : ON
   Picture Mode : Dynamic
4. Connect an oscilloscope to pin ① (CV/Y in) of CN106, A Board.
5. Set to Service Mode and YCT 08 'YOL' with [1] and [4] of the commander then adjust to VY within spec with [3] and [6].
6. Then press [MUTING] → [0] to write the data.
7. Select RF.
8. Repeat item [2] to [4].
9. Set to Service Mode and YCT 04 'SCT' with 1 and 4 of the commander then adjust to VY within spec with [3] to [6].
10. Copy SCT data to NTSC (RF).

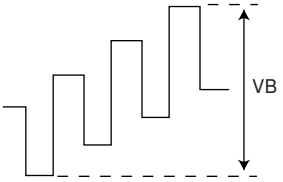
SCT Setting (Video Mode) : 07h (NTSC & PAL)



SPEC: VY : 1.2 Vpp ± 0.05m Vpp

SUB COLOR (YCT) ADJUSTMENT

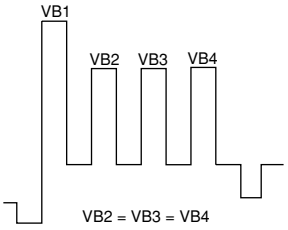
1. Select Video.
2. Input NTSC Color Bar.
3. Set the following condition:
   DTE : ON
   Picture Mode : Dynamic
   NTSC 75% Color Bar
4. Connect an oscilloscope to pin ② (B-Y in) of CN303, A Board.
5. Set to Service Mode and YCT 0A 'COL' with [1] and [4] of the commander then adjust to VB within spec with [3] and [6].
6. Then press [MUTING] → [0] to write the data.
7. Select RF.
8. Repeat item no [2] to [4].
9. Set to Service Mode and YCT 03 'COL' with [1] and [4] of the commander then adjust the waveform within spec with [3] and [6].
10. Then press [MUTING] → [0] to write the data.
11. Input PAL Color Bar (75%) and repeat item no 8 to 10.



SPEC :
VIDEO : VB = 0.931 Vpp ± 50 mVpp
RF : VB = 0.931 Vpp ± 50 mVpp

SUB COLOR (YCJ) ADJUSTMENT

1. Select Video.
2. Input PAL Color Bar to TV set.
3. Set the following condition:
   Pic: 100%, Col: 50%, Brightness: 50%, DTE: OFF
4. Connect an oscilloscope to pin ② (B output) of CN305, A Board.
5. Set to Service Mode and SAJ 03 'SCL' with [1] and [4] of the commander then adjust to VB2 = VB3 = VB4 = with [3] and [6].
6. Then press [MUTING] → [0] to write the data.
7. Add offset steps and save the data.
   Offset: 25... 0*
   29... 0* + 3 steps
   34... 0* + 6 steps 0* : Adjusted data
8. Input NTSC color bar to TV set and repeat item no 3 to 7.
10. Select "WIDE" mode, write the "SAME DATA - 3 STEPS" for both PAL and NTSC input.

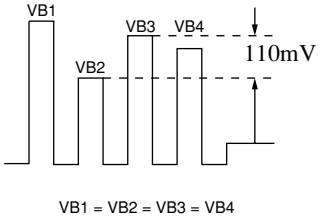


VB2 = VB3 = VB4 (FOR PAL SUB COLOR ADJUSTMENT)
(Difference is within 70mV)
VB1 = VB4 (FOR NTSC SUB COLOR ADJUSTMENT)

Caution : Offset steps of Sub color data should be added only after SUB HUE adjustment is completed.

SUB HUE ADJUSTMENT

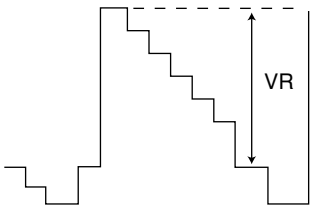
1. Select Video.
2. Input NTSC 3.58 Color Bar to TV Set.
3. Set the following condition:
   Pic: 100%, Col: 50%, Brightness: 50%, DTE: OFF
4. Connect an oscilloscope to pin ① (B output) of CN305, A Board.
5. Set to Service Mode and YCT 00 'SHU' with [1] and [4] of the commander then adjust to VB1 = VB2 = VB3 = VB4 = with [3] and [6].
6. Then press [MUTING] → [0] to write the data.
7. Select RF.
8. Input NTSC 3.58 and repeat item no 3 and 6.



The highest level of VB1, VB2, VB3, VB4 must be aligned at the same time.
Ideal difference level between VB2 and VB3 should be within ± 110 mVpp.

PMX ADJUSTMENT

1. Select Video (Wide mode: OFF).
2. Input PAL Color Bar to TV set.
3. Set the following condition:
   Pic: 100%, Col: 50%, Brightness: 50%, DTE: OFF
4. Connect an oscilloscope to pin ③ (R output) of CN305, A Board.
5. Set to Service Mode and SAJ 00 'PMX' with [1] and [4] of the commander then adjust to VR within spec with [3] and [6].
6. Then press [MUTING] → [0] to write the data.
7. Select "Wide" mode, write the "SAME DATA- 5 STEPS".



VR = 2.35 Vpp (Difference is within 50 mVpp)

VP 06 RLM : 03H
17 R ON : 01H
18 G ON : 00H
19 B ON : 00H
After adjustment, these adjustment parameters must be recovered to the original condition.

4-5. DISPLAY POSITION ADJUSTMENT (not used for these models)

PIP POSITION

1. Input a PAL color-bar.
2. Press PIP button of the remote commander to set the PIP picture.
3. Set to Service Mode.
4. Use [1] and [4] of the remote commander to select PIP 03 "HPS" and use [3] and [6] to set data "15".
5. Select PIP 04 "VPS" to set data "2E".
6. Press [MUTING] → [0] of the remote commander to write the data.
7. Use the screen display menu changing the PIP position to check the PIP position.

4-6. DEFLECTION ADJUSTMENT

NORMAL MODE (50Hz)

1. Set Video Mode.
2. Using the [1] and [4] button, select category GEO (Service Mode).
3. Raise/lower the data using the [3] and [6] buttons. Select and adjust the following items to obtain optimum image.

Service Item

GEO :	00	HPS	H POSITION
	01	HSZ	H SIZE
	02	PAP	PIN AMP
	03	TLT	TILT
	04	VPS	V POSITION
	05	VSZ	V SIZE
	06	SCO	S CORRECTION
	07	VLN	V LINEARITY
	08	BOW	AFC BOW
	09	AGL	AFC ANGLE
	0A	UPN	UPPER CORNER PIN
	0B	LPN	LOWER CORNER PIN

WIDE MODE (50Hz)

4. Input PAL color bar.
5. Adjust condition change to WIDE MODE : ON.
6. Using the [1] and [3] button, select category GEO (Service Mode).
7. Copy (item from normal mode (50Hz)) adjusted data for the following item:

Service Item

GEO :	01	HSZ	H POSITION
	05	VSZ	V POSITION
	06	SCO	S CORRECTION
	07	VLN	V LINEARITY

8. Raise/lower data using [3] and [6] buttons, select and adjust the following items to obtain optimum image.

Service Item

GEO :	00	HPS	H POSITION
	02	PAP	PIN AMP
	03	TLT	TILT
	04	VPS	V POSITION
	08	BOW	AFC BOW
	09	AGL	AFC ANGLE
	0A	UPN	UPPER CORNER PIN
	0B	LPN	LOWER CORNER PIN

9. After confirm WIDE MODE : ON – OFF.
10. Repeat same steps for NTSC input signal.

NORMAL MODE (60Hz)

1. Set to Service Mode.
2. Using the [1] and [4] buttons select category GEO (Service Mode).
3. Select and adjust the following items to obtain obtimum image. Raise/lower the data with the [3] and [6] buttons.

Service Item

GEO :	00	HPS	H POSITION
	01	HSZ	H SIZE
	02	PAP	PIN AMP
	03	TLT	TILT
	04	VPS	V POSITION
	05	VSZ	V SIZE
	06	SCO	S CORRECTION
	07	VLN	V LINEARITY
	08	BOW	AFC BOW
	09	AGL	AFC ANGLE
	0A	UPN	UPPER CORNER PIN
	0B	LPN	LOWER CORNER PIN

WIDE MODE (60Hz)

4. Input monoscope signal.
5. Adjust condition change to WIDE MODE: ON.
6. Using the [1] and [4] button select category GEO (Service Mode).
7. Copy (item from NORMAL MODE (60Hz)) adjusted data for the following items:

Service Item

GEO :	01	HSZ	H SIZE
	05	VSZ	V SIZE
	06	SCO	S CORRECTION
	07	VLN	V LINEARITY

8. Raise/lower the data with the [3] and [6] buttons. Select and adjust the following items to obtain optimum image.

Service Item

GEO :	00	HPS	H POSITION
	02	PAP	PIN AMP
	03	TLT	TILT
	04	VPS	V POSITION
	08	BOW	AFC BOW
	09	AGL	AFC ANGLE
	0A	UPN	UPPER CORNER PIN
	0B	LPN	LOWER CORNER PIN

9. After confirm WIDE MODE : ON – OFF.

Note:
For Deflection Adjustment, set PICTURE MODE to "SOFT".

4-7. H-TRAPEZOID ADJUSTMENT

1. Receive cross hatch/dot signal.
2. Adjust RV1801 on C6 board to make H-Trapezoid distortion best.

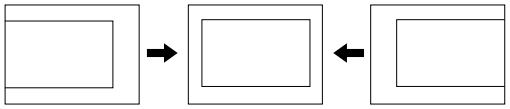
4-8. A BOARD ADJUSTMENT AFTER IC003 (MEMORY) REPLACEMENT

1. Enter to Service Mode.
2. Press commander buttons [5] and [0] (Data Initialize), and [2] and [0] (Data Copy) to initialize the data.
3. Call each item number and check if the respective screen shows the normal picture.
   In cases where items are not well adjusted, rectify the fine adjustment.
   Write the data per each item number ([MUTING] → [0]).
4. Select item numbers "OPB00" (OP1), "OPB01" (OP2), "OPB 02" (OP3) and "OPB 03" (OP4) respectively set the bit per model with command buttons [3] and [6].
5. Press commander buttons [8] and [0] (Test Normal) to return to the data that was set on the shipment from the factory.
   (This will also cancel Service Mode.)

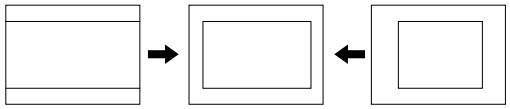
4-9. PICTURE DISTORTION ADJUSTMENT (1)

Item Number 00 – 0B

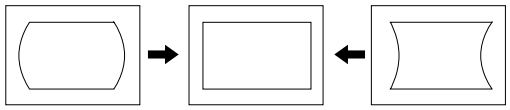
GEO 0 HPS (H POSITION)



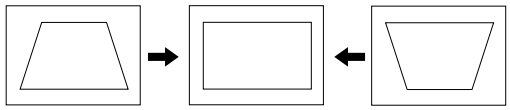
GEO 1 HSZ (H SIZE)



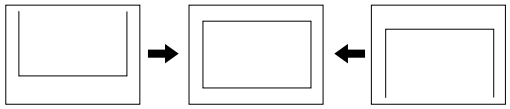
GEO 2 PAP (PIN AMP)



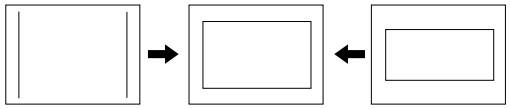
GEO 3 TLT (TRAPEZIUM)



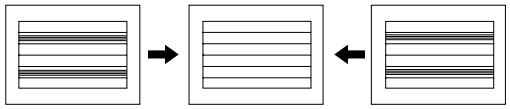
GEO 4 VPS (V POSITION)



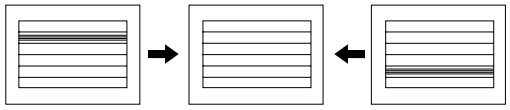
GEO 5 VSZ (V SIZE)



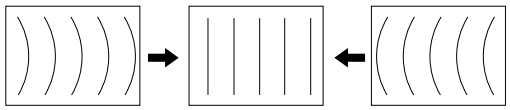
GEO 6 SCO (VERTICAL S-Correction)



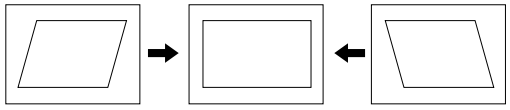
GEO 7 VLN (V LINEARITY)



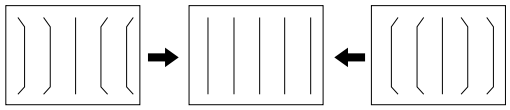
GEO 8 BOW (AFC. BOW)



GEO 9 AGL (AFC. ANGLE)

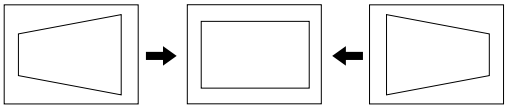


GEO 0A UPN (UPPER CORNER PIN)
GEO 0B LPN (LOWER CORNER PIN)



PICTURE DISTORTION ADJUSTMENT (2)

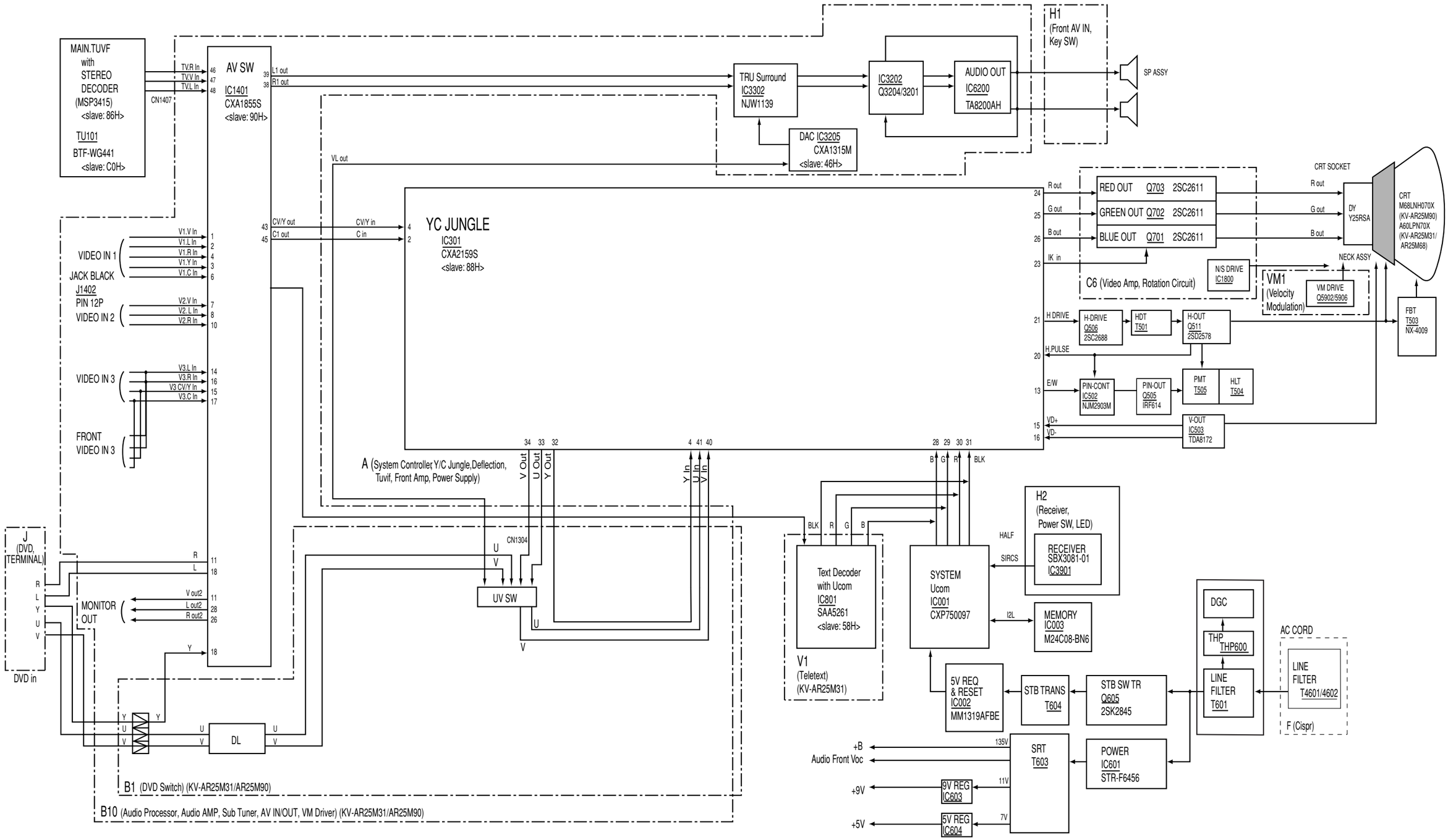
H-TRAPEZOID (ROTATE RVI801)



SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAM

(FOR KV-AR25M31/AR25M90)



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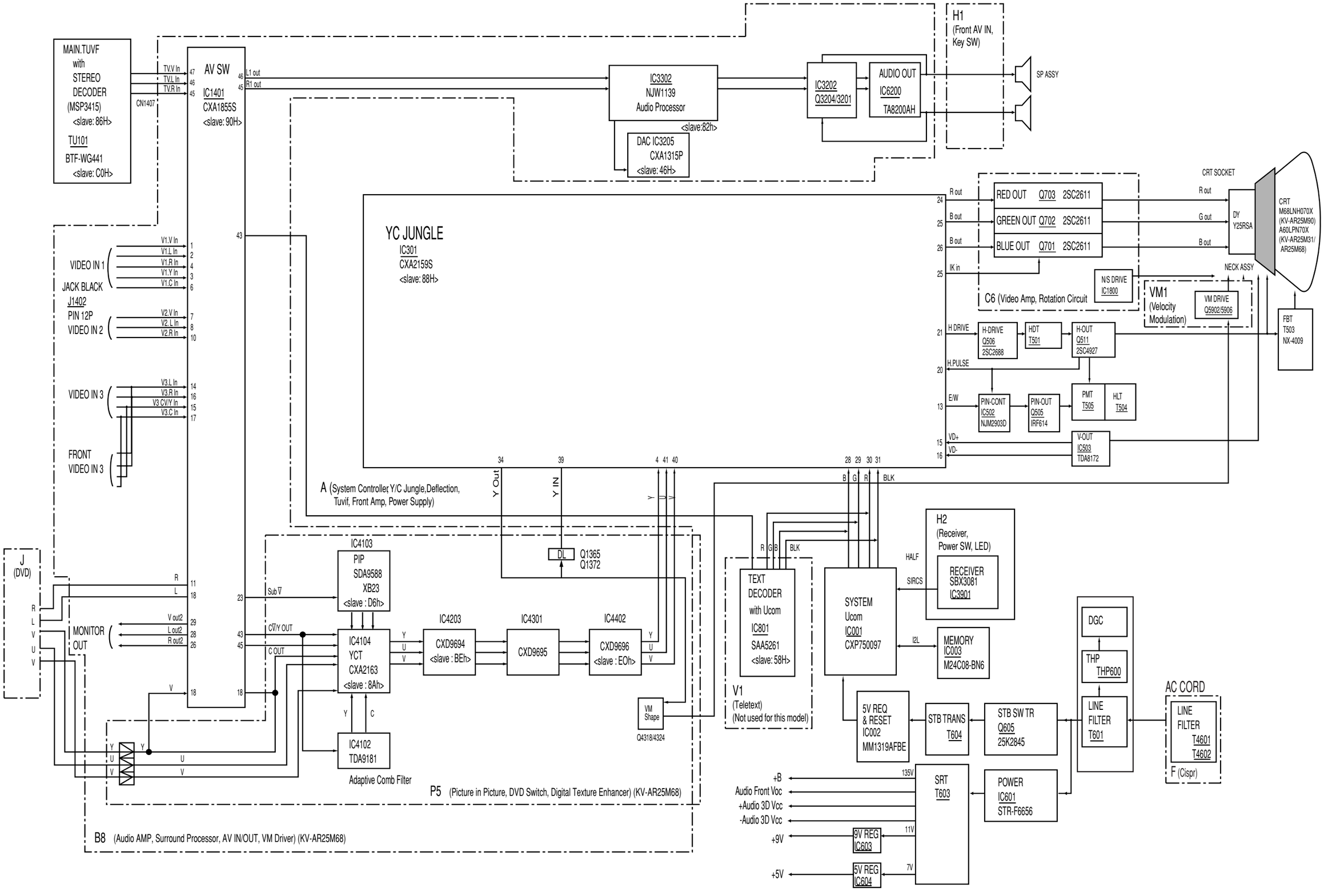
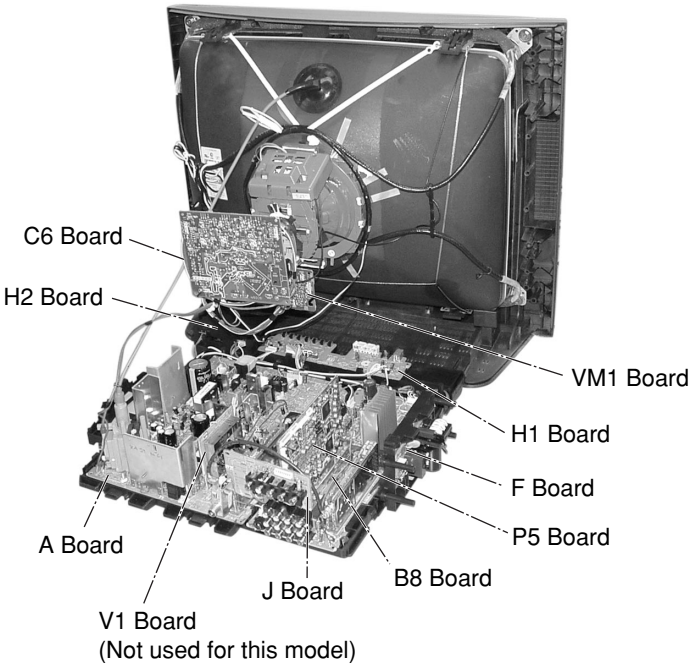
(FOR KV-AR25M68 ONLY)

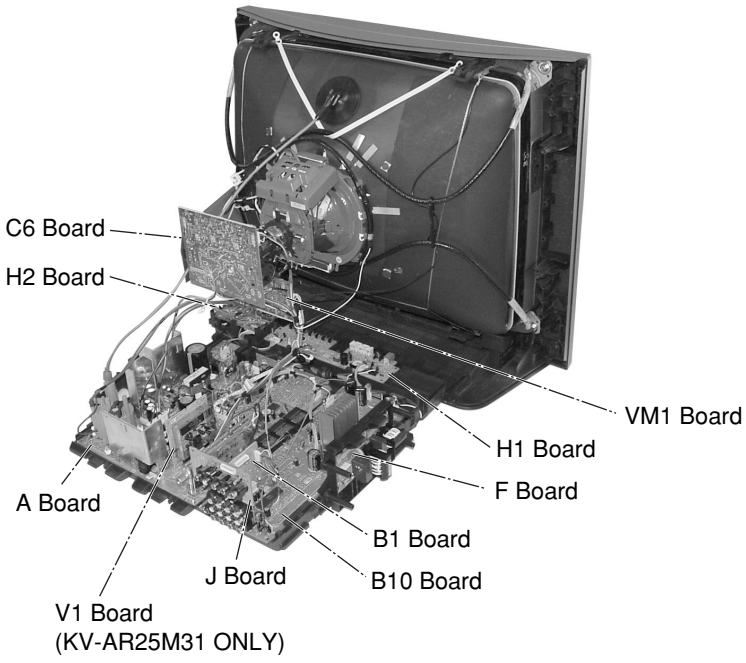


5-2. CIRCUIT BOARDS LOCATION

(FOR KV-AR25M68)



(FOR KV-AR25M31/AR25M90)



5-3. SCHEMATIC DIAGRAM

Note:

- All capacitors are in µF unless otherwise noted.
- All electrolytic capacitors are rated at 50V unless otherwise noted.
- All resistors are in ohms.
  kΩ = 1000Ω, MΩ = 1000kΩ
- Indication of resistance which does not have rating electrical power is as follows.

  Pitch: 5 mm
  Rating electrical power 1/4W (CHIP: 1/10W)

- : nonflammable resistor.
- △ : internal component.
- : panel designation or adjustment for rrepair.
- All variable and adjustable resistors have characteristic curve B unless otherwise noted.
- **Redings are taken with a color-bar signal input.**
  no mark : Common
  ( ) : PAL
  [ ] : NTSC 3.58
- **Readings are taken with a 10MΩ digital multimeter.**
- **Voltage are dc with respect to ground unless otherwise noted.**
- **Voltage variations may be noted due to normal production tolerances.**
- **All voltage are in V.**
- **✻ : Cannot be measured.**
- **Circled numbers are waveform references.**
- **: B +bus.**
- **: B –bus.**
- **: signal path.**

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: ✻	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The component identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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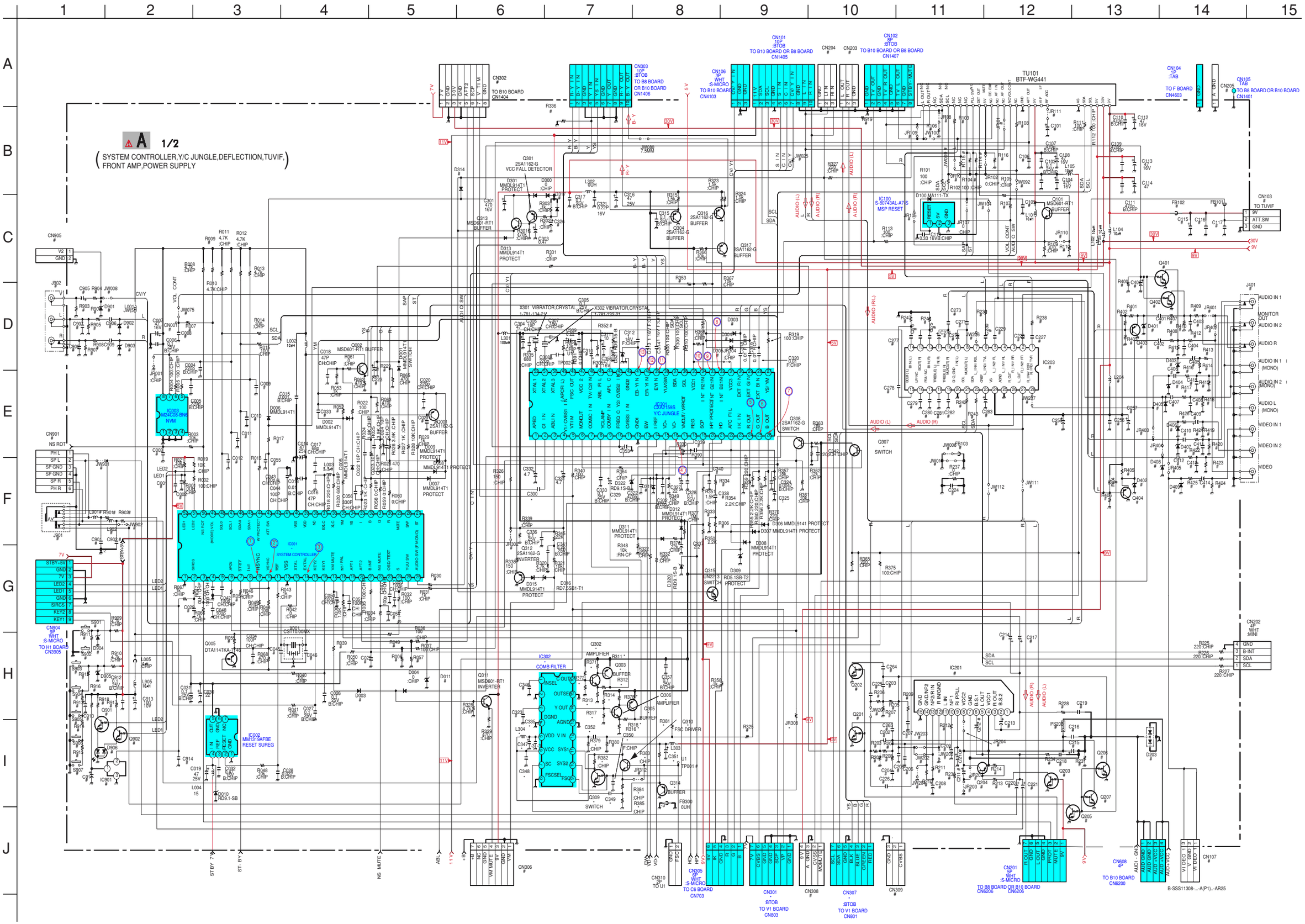
(1) A Board Schematic Diagram


1/2
(SYSTEM CONTROLLER,Y/C JUNGLE,DEFLECTIION,TUVIF, FRONT AMP,POWER SUPPLY)
TU101 BTF-WG441
IC203 CXA2159S Y/C JUNGLE
IC001 SYSTEM CONTROLLER
IC100 S-80743AL-A7S MSP RESET
IC201
IC302 COMB FILTER
IC205 MM1918AFBE RESET SUREG
IC901 M24C08-BN6 NVM
Q001 2SA1162-G BUFFER
Q002 MSD601-RT1 BUFFER
Q101 MSD601-RT1 BUFFER
Q301 2SA1162-G VCC FALL DETECTOR
Q307 SWITCH
Q308 2SA1162-G SWITCH
Q312 2SA1162-G INVERTER
Q313 MSD601-RT1 BUFFER
Q316 2SA1162-G BUFFER
Q317 2SA1162-G BUFFER
Q904 2SA1162-G BUFFER
Q005 DTA114TKA-T146
Q309 SWITCH
Q311 MSD601-RT1 INVERTER
Q314 BUFFER
D100 MA111-TX
D300 MMDL914T1 PROTECT
D301 MMDL914T1 PROTECT
D313 MMDL914T1 PROTECT
D315 MMDL914T1 PROTECT
D316 RD7.5SB1-T1
D002 MMDL914T1
D004 MMDL914T1
D005 MMDL914T1
D006 MMDL914T1
D007 MMDL914T1 PROTECT
D009 MMDL914T1 PROTECT
D010 RD9.1-SB
D011 MMDL914T1 SWITCH
D012 MMDL914T1 PROTECT
D311 MMDL914T1 PROTECT
D306 MMDL9141 PROTECT
D307 MMDL914T1 PROTECT
D308 MMDL914T1 PROTECT
D309 RD5.1SB-T2 PROTECT
D320 RD9.1S-B
D322 RD9.1S-B
CN101 :10P :BTOB TO B10 BOARD OR B8 BOARD CN1405
CN102 :8P :BTOB TO B10 BOARD OR B8 BOARD CN1407
CN106 :8P :WHT :S-MICRO TO B10 BOARD CN4103
CN303 :10P :BTOB TO B8 BOARD OR B10 BOARD CN1406
CN302 TO B10 BOARD CN1404
CN104 :1P :TAB TO F BOARD CN4603
CN105 :TAB TO B8 BOARD OR B10 BOARD CN1401
CN103 TO TUVIF
CN202 :4P :WHT :MINI
CN904 :9P :WHT :S-MICRO TO H1 BOARD CN3905
CN305 :6P :WHT :S-MICRO TO C6 BOARD CN703
CN301 :BTOB TO V1 BOARD CN803
CN307 :BTOB TO V1 BOARD CN801
CN201 :9P :WHT :S-MICRO TO B8 BOARD OR B10 BOARD CN6206
CN608 :4P TO B10 BOARD CN6200
CN107
CN310 :6P TO U1
CN306
CN309
CN905
CN901
CN902
CN903
J902
J401
J301
J901
J402
J403
J404
J405
J406
J407
J408
J409
J410
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J427
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J430
J431
J432
J433
J434
J435
J436
J437
J438
J439
J440
J441

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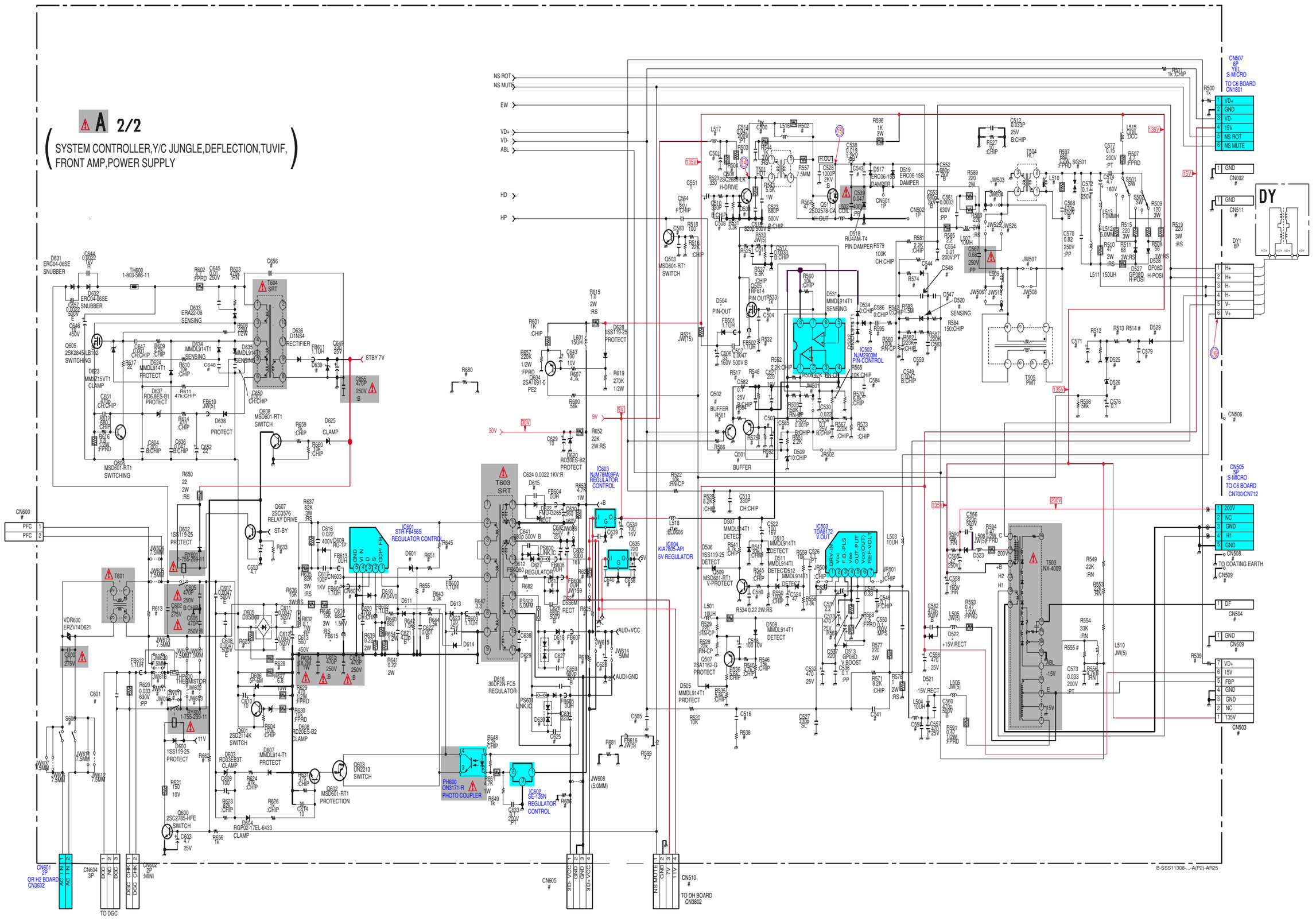
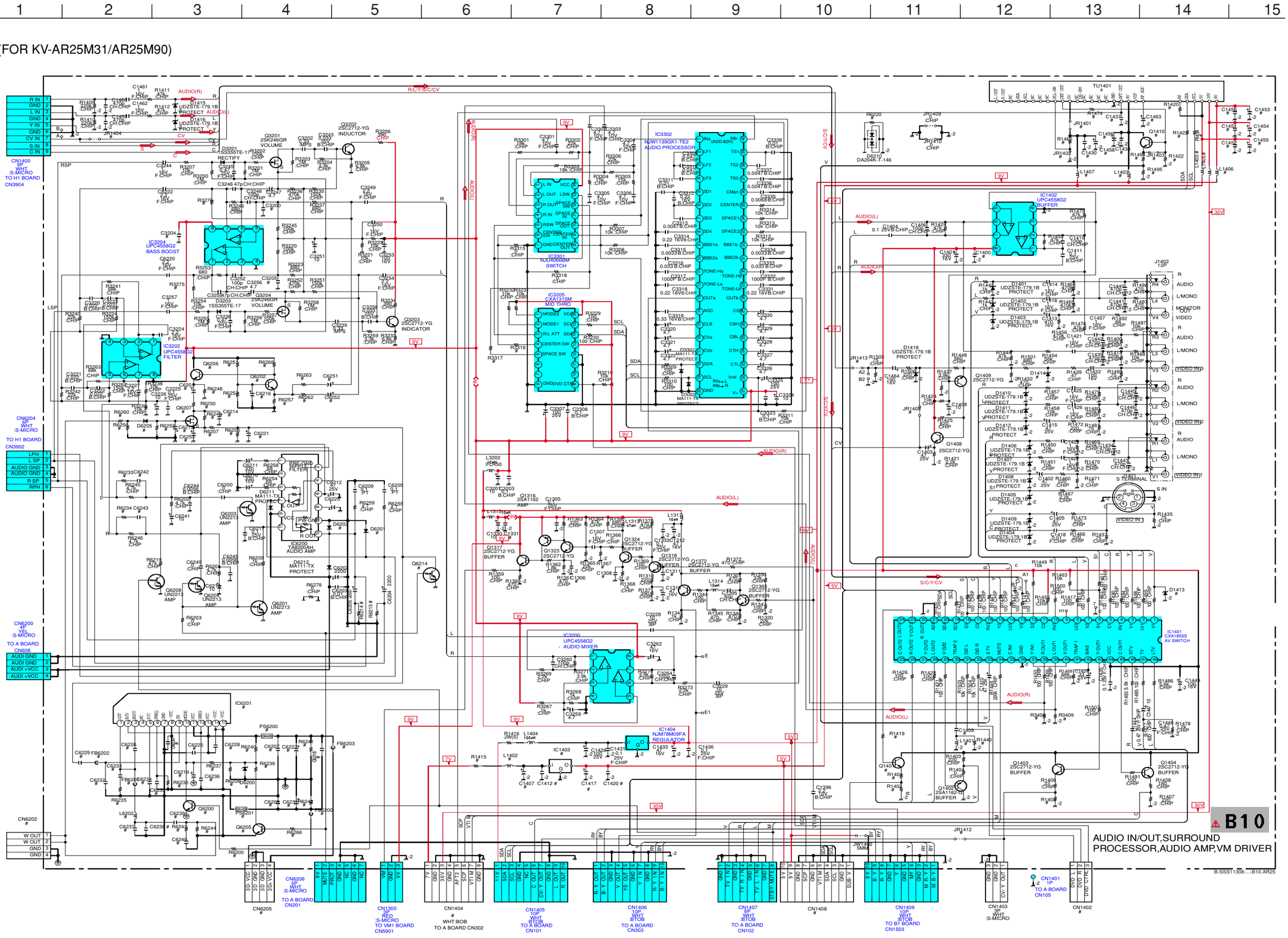
⚠A 2/2

SYSTEM CONTROLLER,Y/C JUNGLE,DEFLECTION,TUVIF,
FRONT AMP,POWER SUPPLY



(2) B10 Board Schematic Diagram

(FOR KV-AR25M31/AR25M90)



KV-AR25M68/AR25M31/AR25M90
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(3) V1 Board Schematic Diagram

(FOR KV-AR25M31 ONLY)

V1
(TELE TEXT)

IC801
SAA5261
TEXT DECODER

0.0 0.1 0.2 0.3 1.0 1.1 1.2 1.3(PWM) RES RES RES RES VSS D CL(NVM) DA(NVM) SL ADDR FIELD HMD VMD PDI PH.L VSSA CVBS N.C BLACK I REF
EAST /WEST 8/30 SDA SCL LCB PKTX/30 DSR LIST VDDM RESET X OUT X IN X GND VDDT VDDA VP HP BLK R OUT G OUT B OUT RGB REF PON COR VSSA ODD /EVEN

X801 15787742 1

D802 DAP202U PROTECT

D803 RD3.3M-B2 PROTECT

D804 RD5.6M-B2 PROTECT

D805 #

D806 #

D807 #

Q801 2SC1623-L5L6

Q802 #

Q803 2SC1623-L5L6 RESET OUT

Q805 2SC1623-L5L6 INVERTER

Q806 2SC1623-L5L6 B BUFFER

Q807 2SC1623-L5L6 G BUFFER

Q808 2SC1623-L5L6 R BUFFER

Q810 2SC1623-L5L6 BUFFER

Q811 2SD2394-EF BUFFER

Q812 #

Q813 #

Q814 #

Q815 #

Q816 #

Q817 UN2211

Q818 #

FB801 1.1UH

FB802 1.1UH

FB803 1.1UH

FB804 470UH

FB805 1.1UH

JR800 0:CHIP

FILTER

CN801
7P
:BTOB
TO A BOARD
CN307

1 RED
2 GREEN
3 BLUE
4 BLK
5 GND
6 SDA
7 SCL

CN803
7P
:BTOB
TO A BOARD
CN301

1 GND
2 VP
3 SCP
4 GND
5 GND
6 CVBS
7 7.5V

B-SSS11308-...-V1.-AR25

KV-AR25M68/AR25M31/AR25M90
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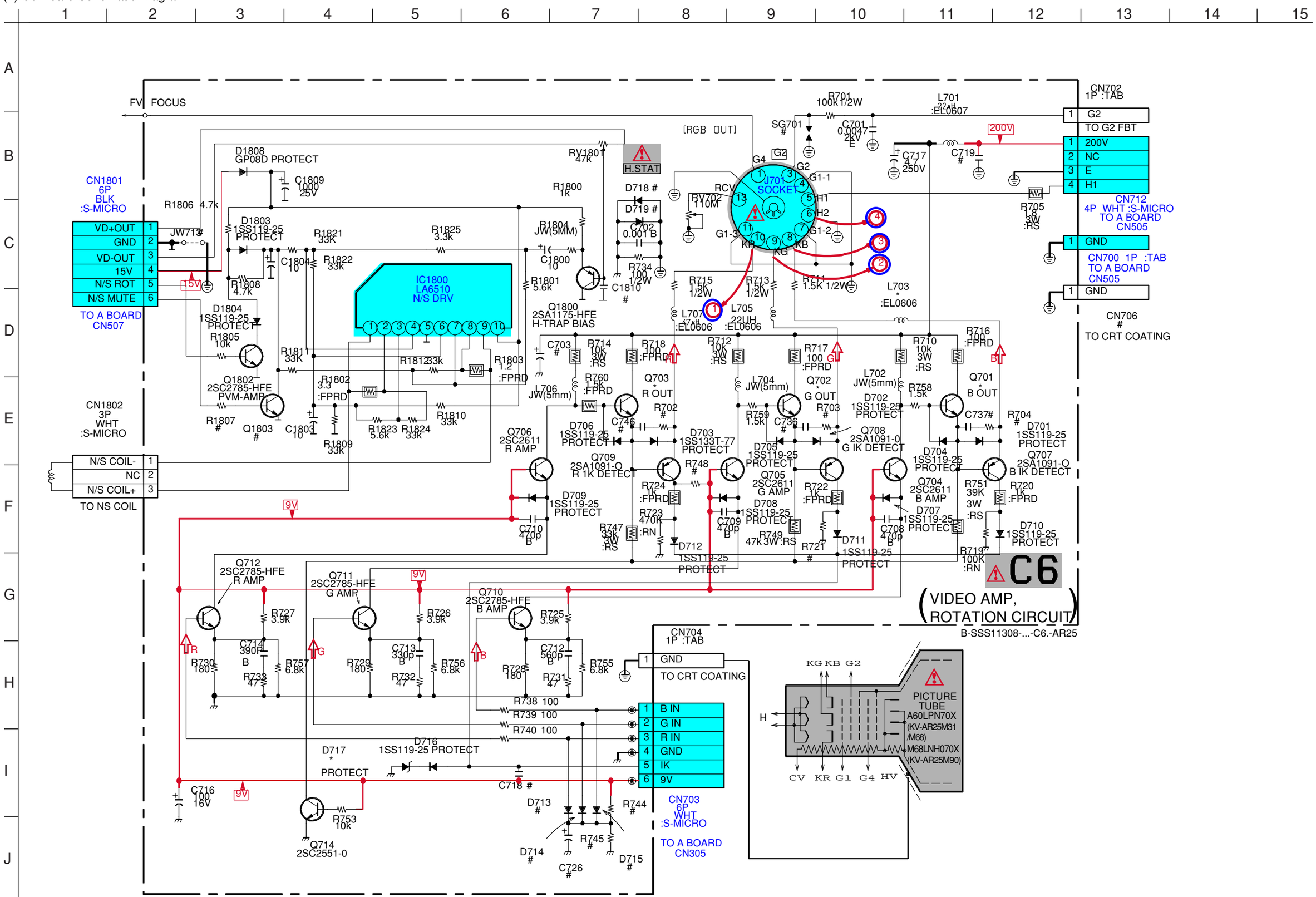
(4) C6 Board Schematic Diagram



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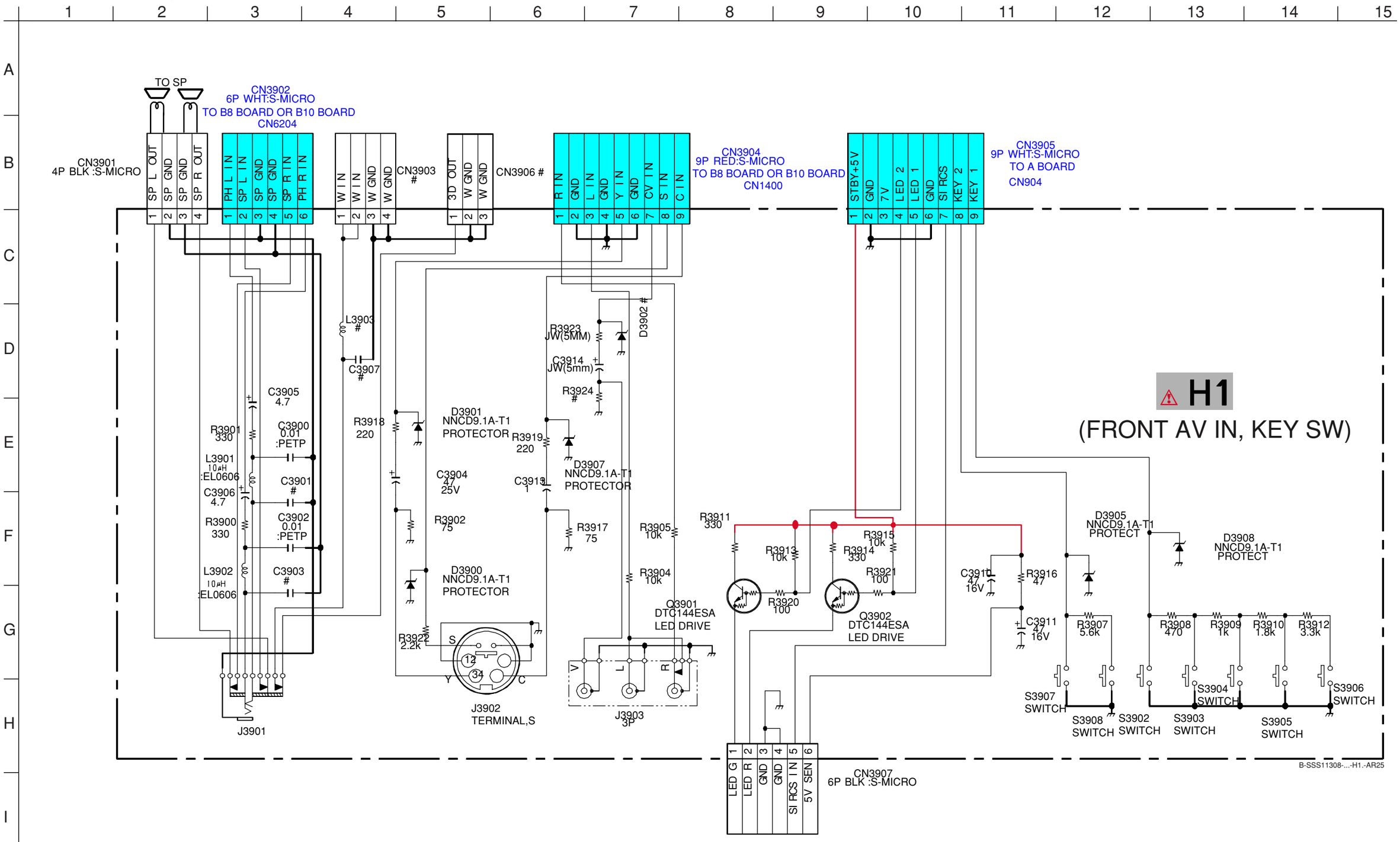
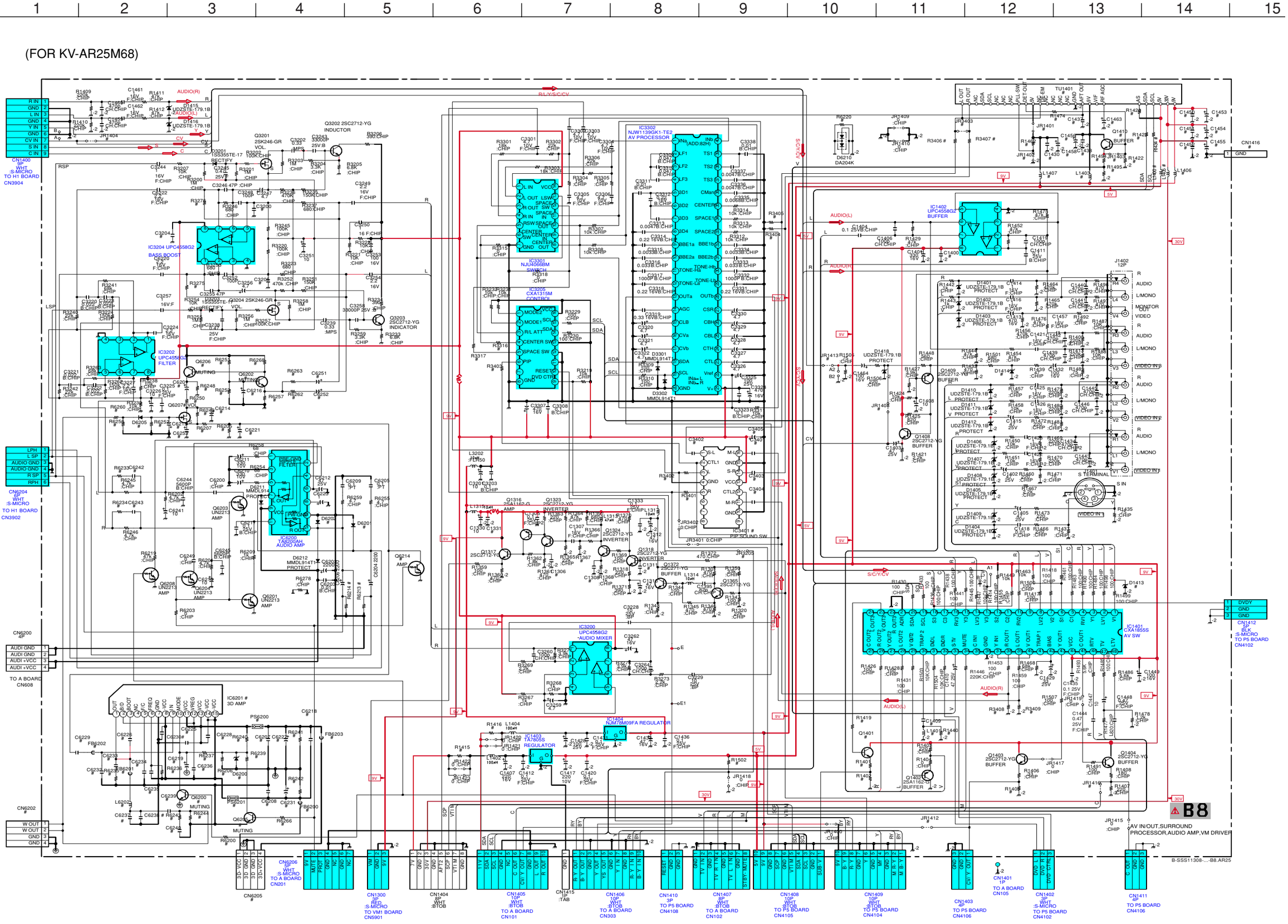
(5) H1 Board Schematic Diagram



(6) B8 Board Schematic Diagram

(FOR KV-AR25M68)


CN1400 9P WHT :S-MICRO TO H1 BOARD CN3904
CN6204 6P WHT :S-MICRO TO H1 BOARD CN3902
CN6200 4P AUDI GND AUDI GND AUDI +VCC AUDI +VCC TO A BOARD CN608
CN6202 W OUT W OUT GND GND
CN6206 8P WHT :S-MICRO TO A BOARD CN201
CN6205
CN1300 10P RED :S-MICRO TO VM1 BOARD CN5901
CN1404 6P WHT :BTOB
CN1405 10P WHT :BTOB TO A BOARD CN101
CN1415 3P :TAB
CN1406 10P WHT :BTOB TO A BOARD CN303
CN1410 3P TO P5 BOARD CN4108
CN1407 8P WHT :BTOB TO A BOARD CN102
CN1408 10P WHT :BTOB TO P5 BOARD CN4105
CN1409 10P WHT :BTOB TO P5 BOARD CN4104
CN1403 4P TO P5 BOARD CN4106
CN1401 1P TO A BOARD CN105
CN1402 3P WHT :S-MICRO TO P5 BOARD CN4102
CN1411 4P TO P5 BOARD CN4106
CN1412 3P BLK :S-MICRO TO P5 BOARD CN4102
CN1416 GND
IC3202 UPC4558G2 FILTER
IC3204 UPC4558G2 BASS BOOST
IC3200 UPC4558G2 AUDIO MIXER
IC3302 NJW1139GK1-TE2 AV PROCESSOR
IC3301 NJU4066BM SWITCH
IC3205 CXA1315M CONTROL
IC1402 UPC4558G2 BUFFER
IC1401 CXA1955S AV SW
IC6200 TA8200AH AUDIO AMP
IC6201 # 3D AMP
IC1403 TA7805S REGULATOR
IC1404 NJM78M09FA REGULATOR
B8
AV IN/OUT,SURROUND PROCESSOR,AUDIO AMP,VM DRIVER
B-SSS11308-....-B8.AR25

KV-AR25M68/AR25M31/AR25M90
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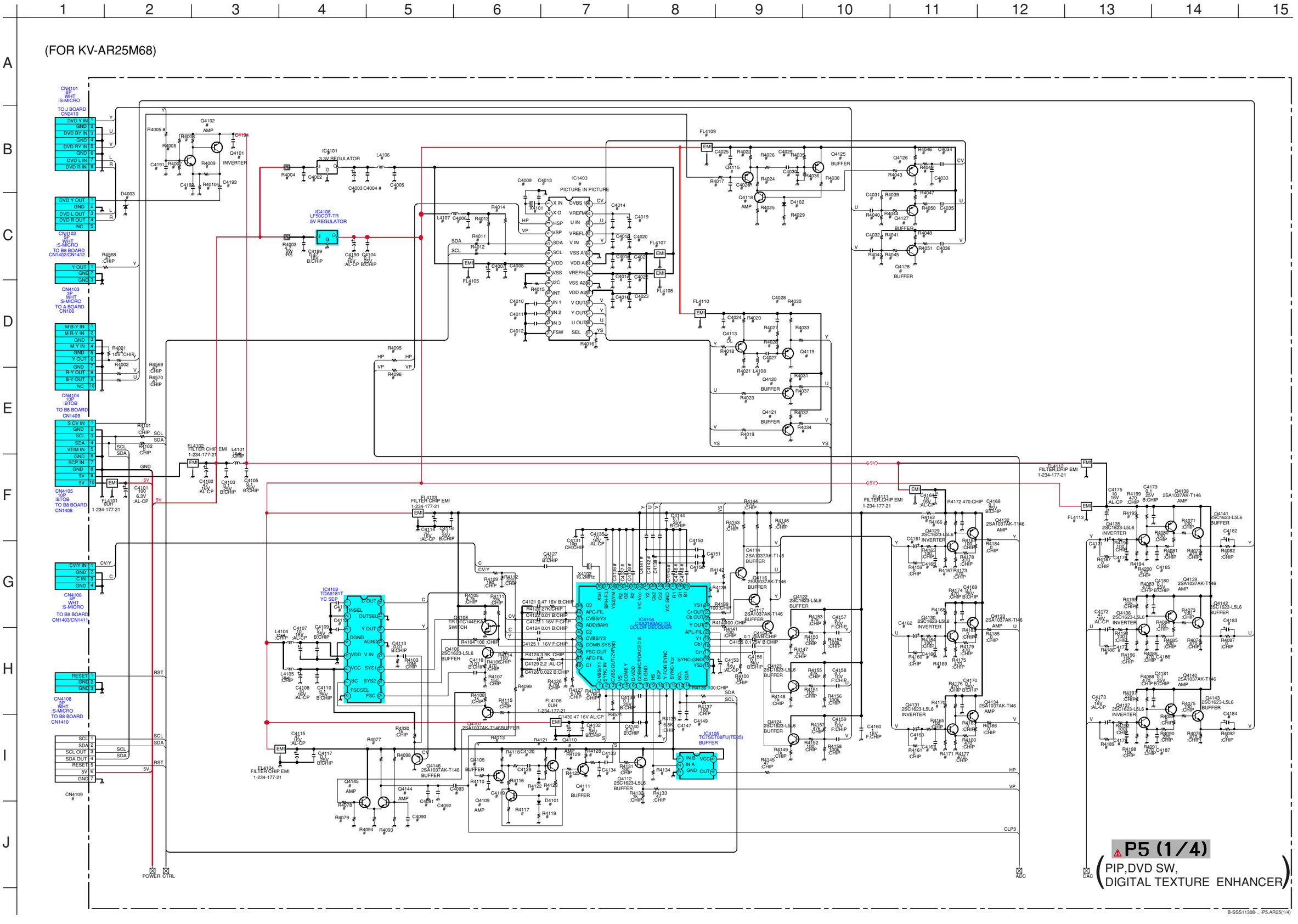
(7) P5 Board Schematic Diagram

(FOR KV-AR25M68)



P5 (1/4)

(PIP,DVD SW, DIGITAL TEXTURE ENHANCER)

B-SSS11308-...-P5.AR25(1/4)

KV-AR25M68/AR25M31/AR25M90
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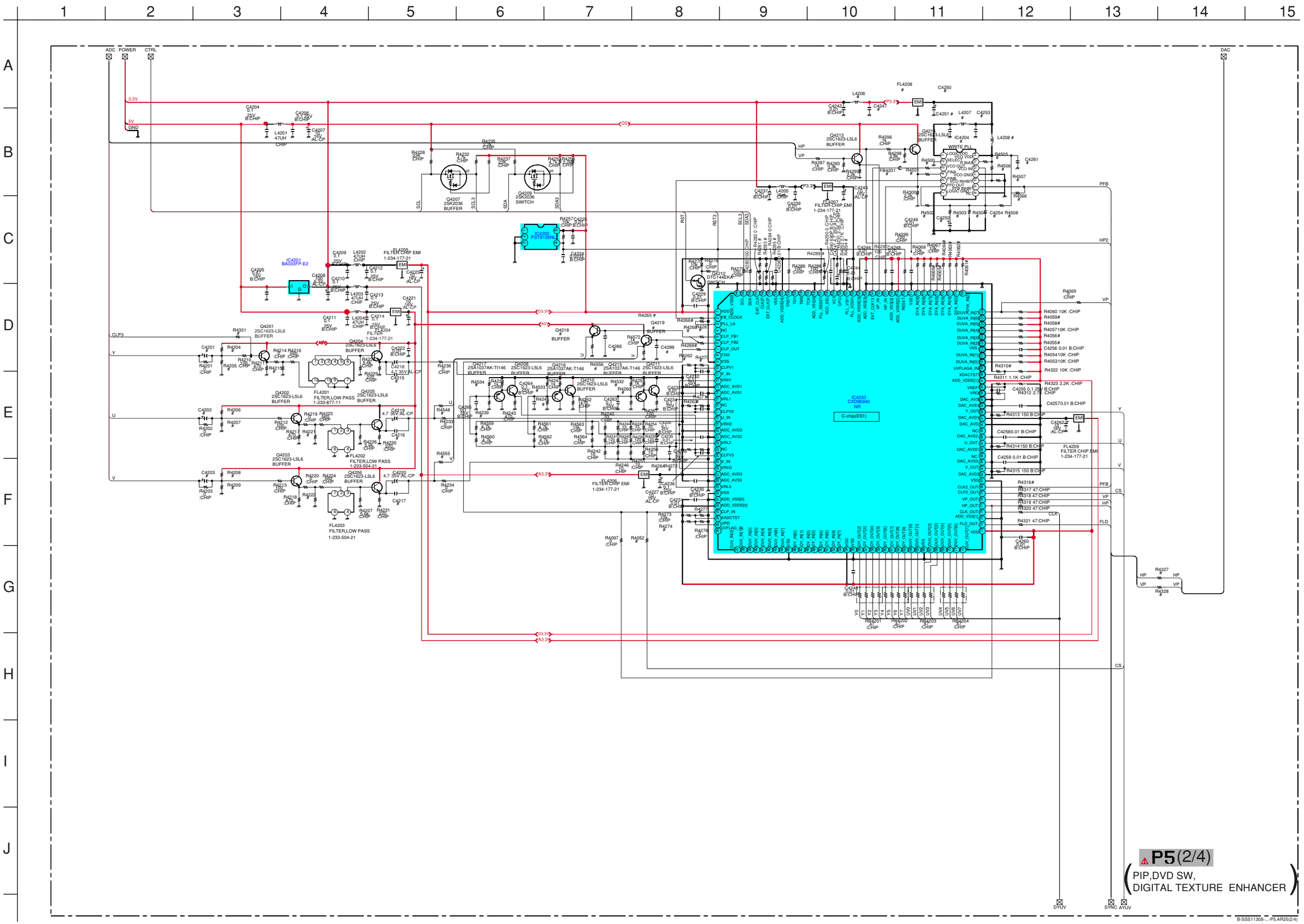
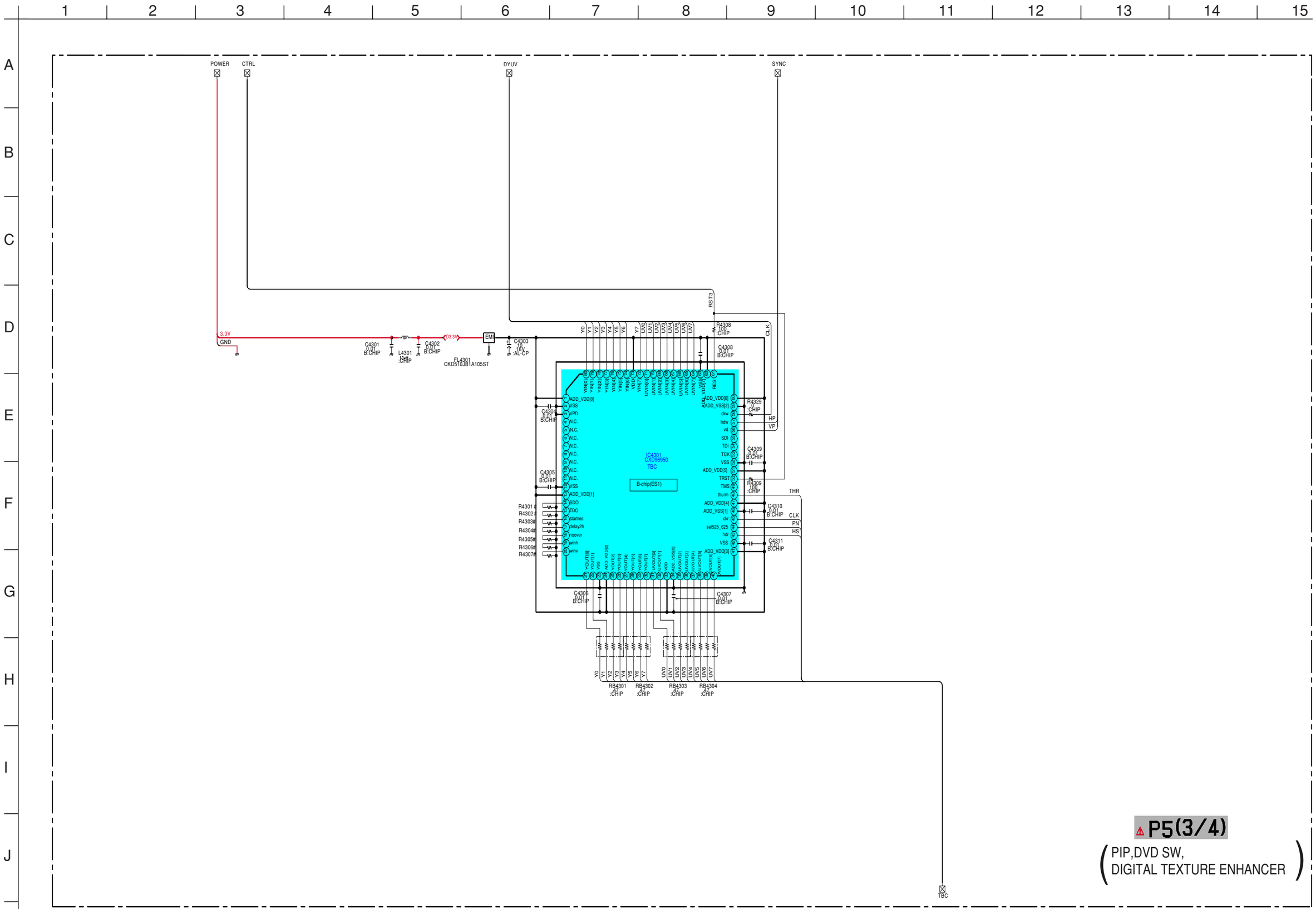


KV-AR25M68/AR25M31/AR25M90
RM-993 RM-995

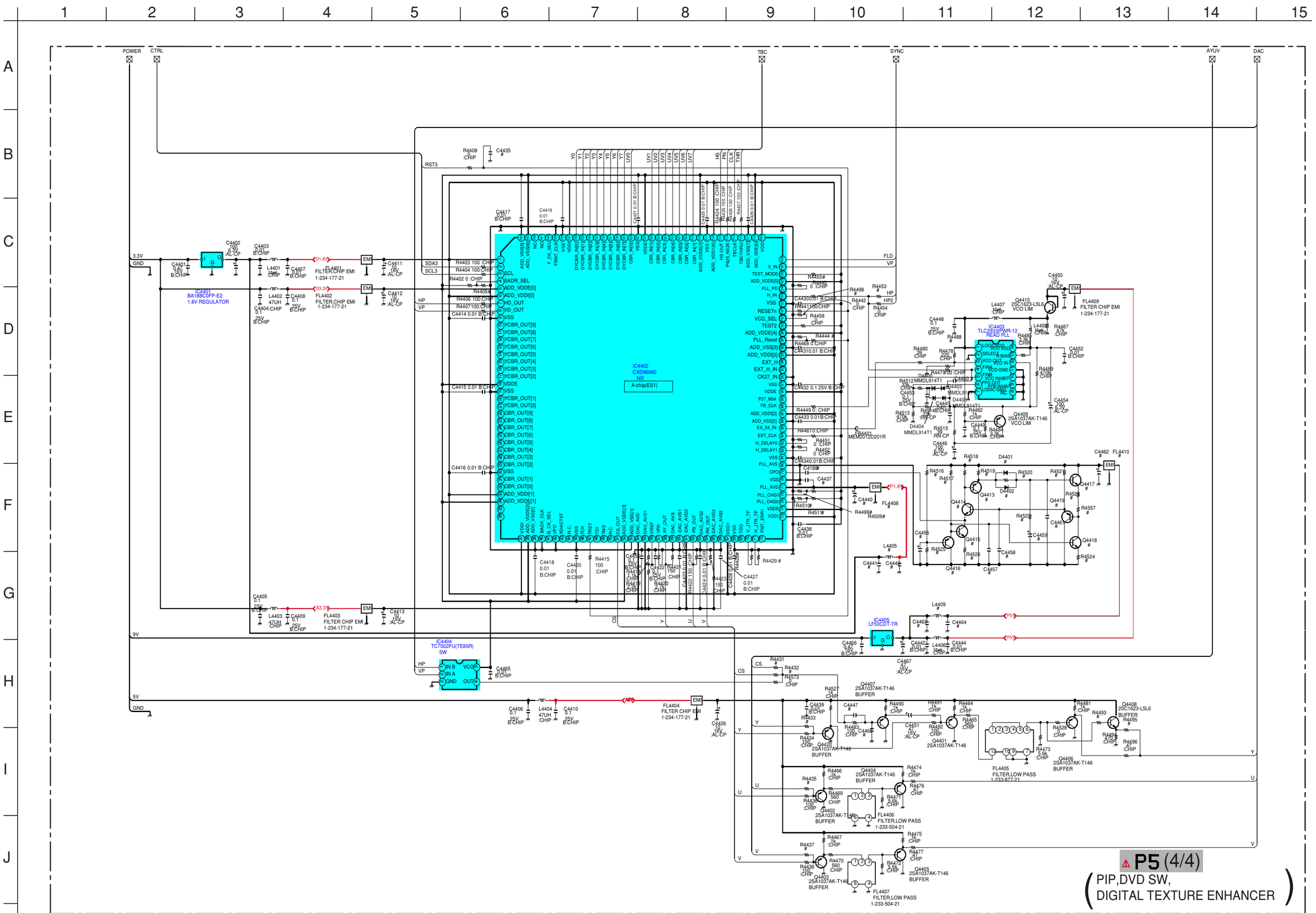


⚠P5(3/4)

(PIP,DVD SW,
DIGITAL TEXTURE ENHANCER)

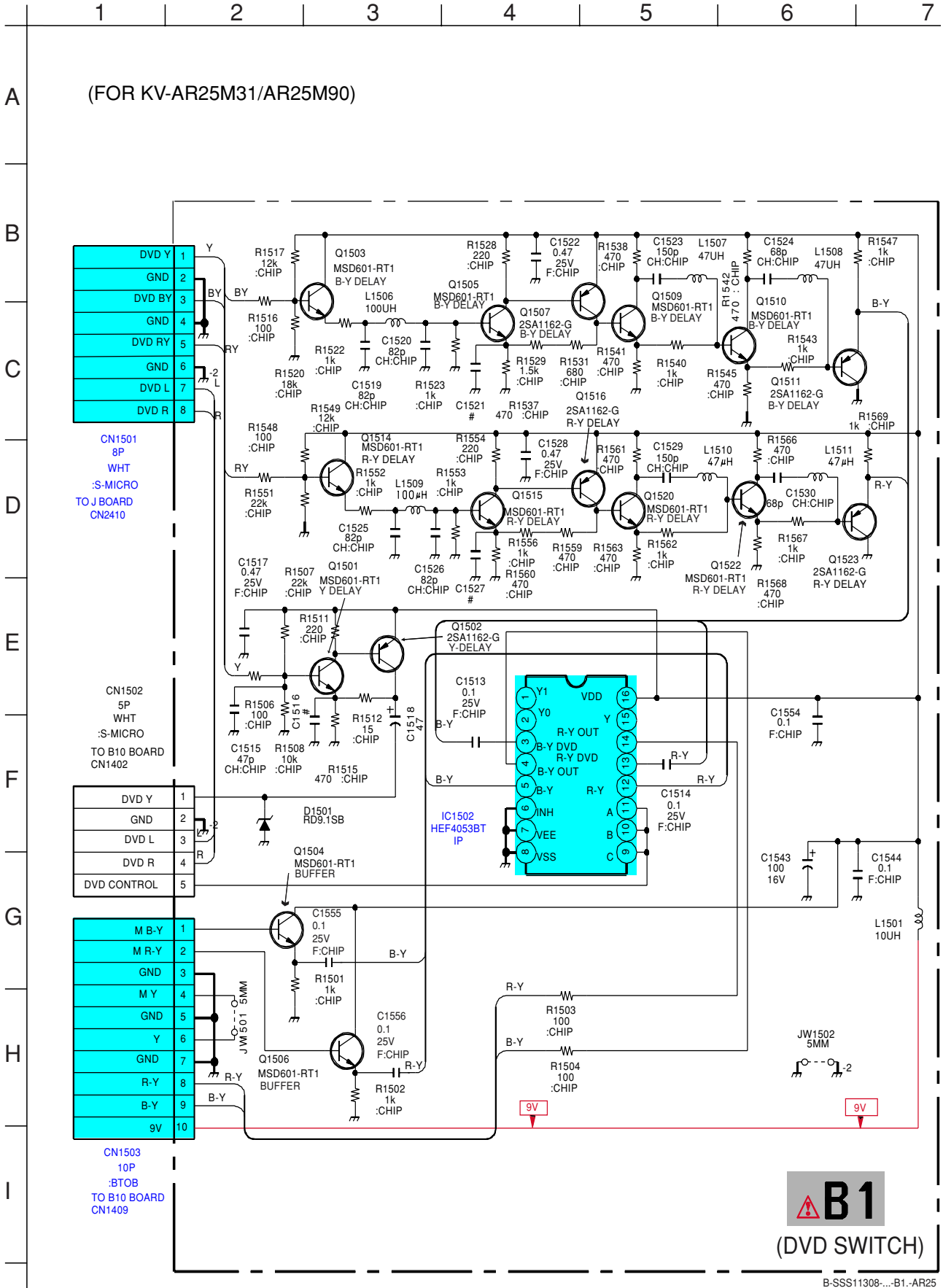
B-SSS11308-...-P5.-AR25(3/4)

KV-AR25M68/AR25M31/AR25M90
RM-993 RM-995

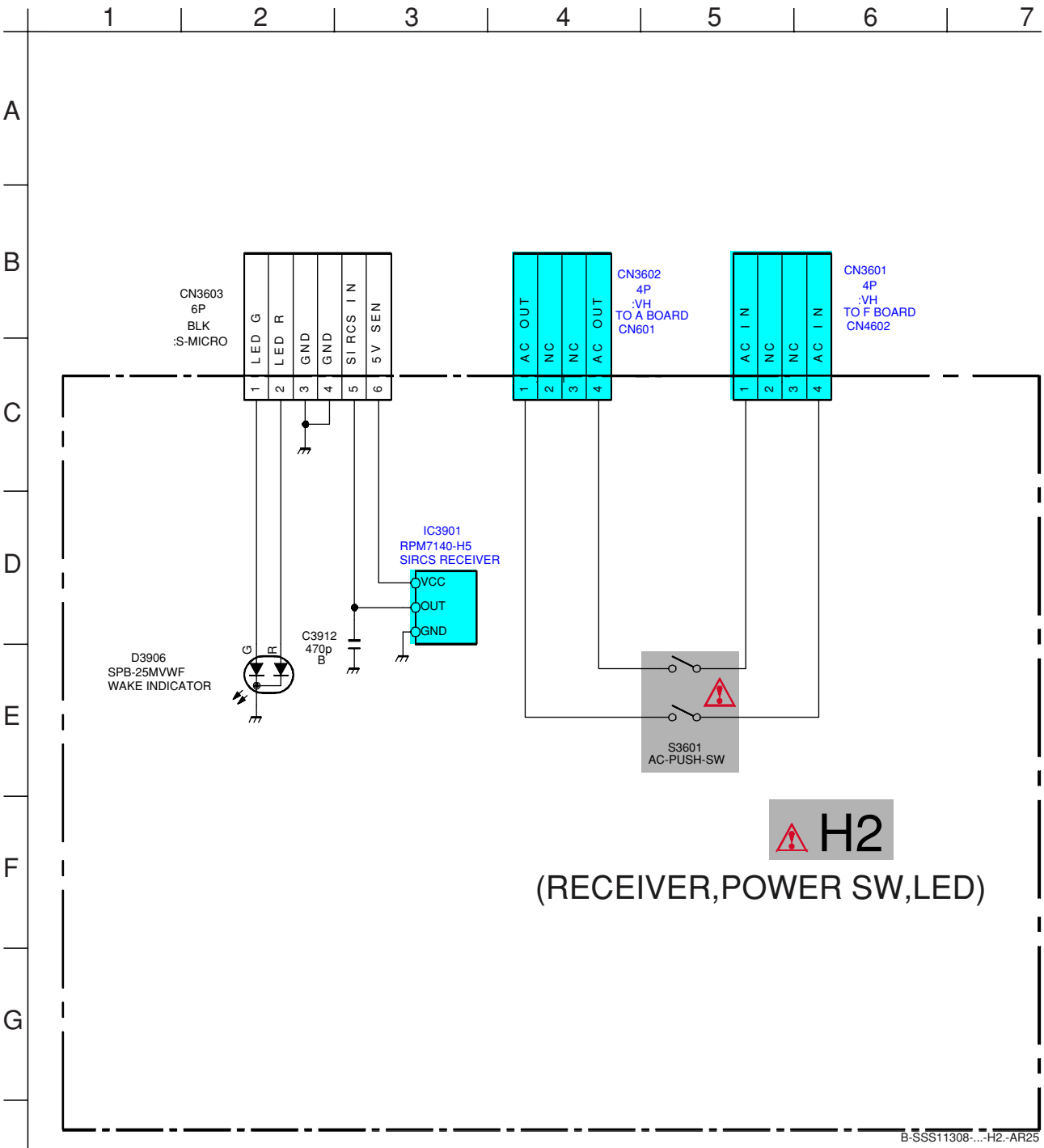


(8) B1 Board Schematic Diagram

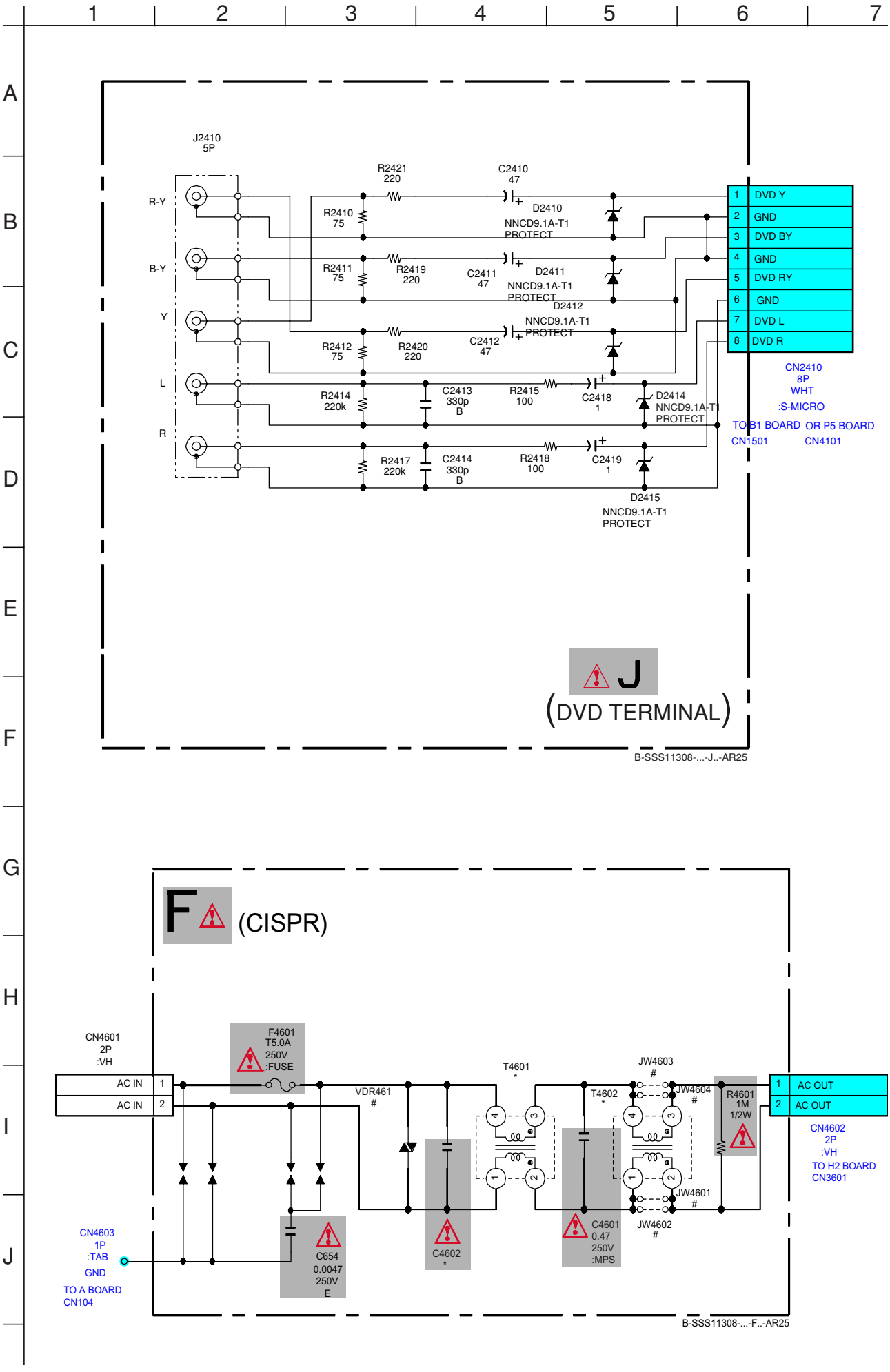
(FOR KV-AR25M31/AR25M90)



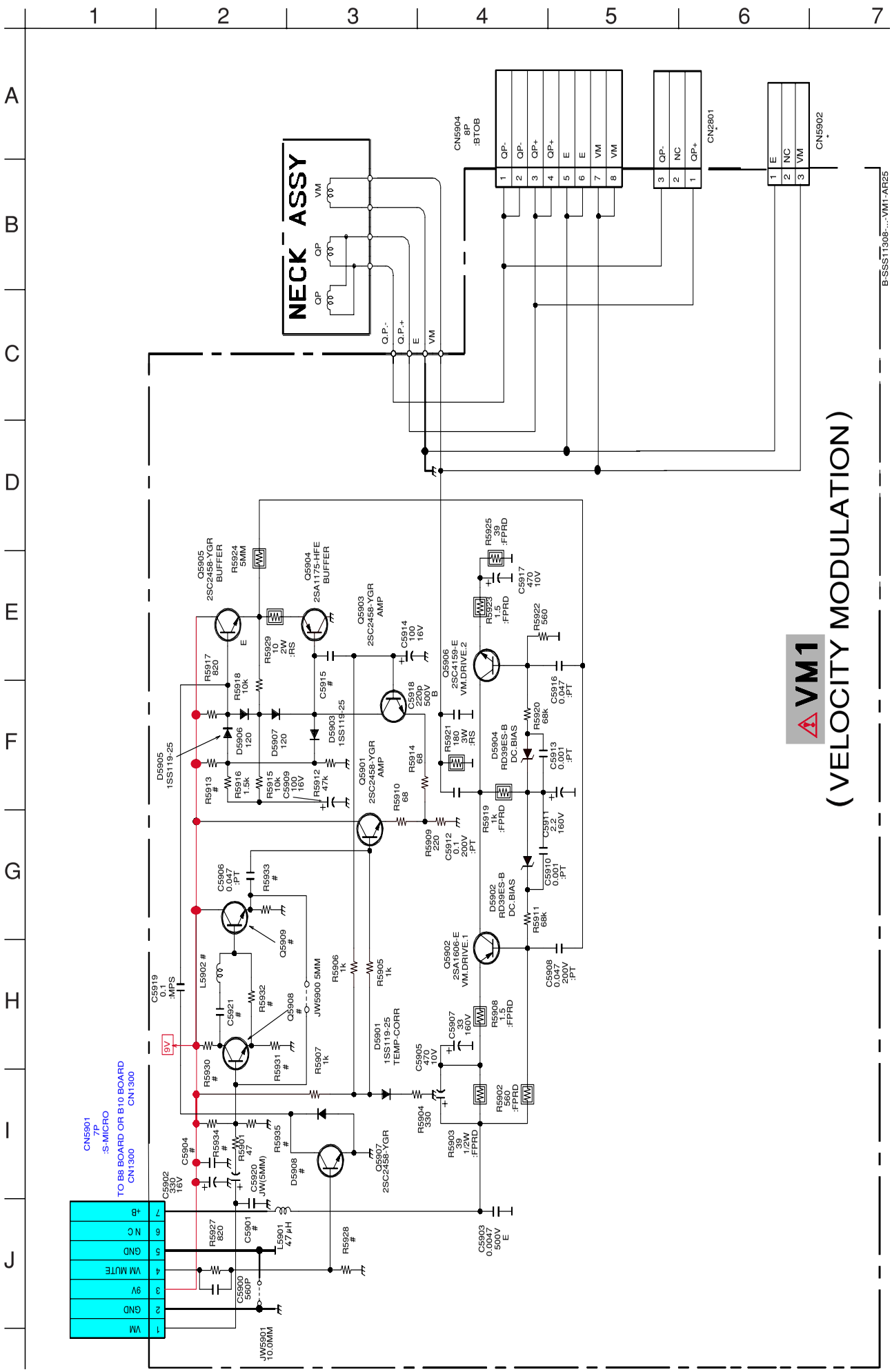
(9) H2 Board Schematic Diagram



(10) J and F Boards Schematic Diagrams



(11) VM1 Board Schematic Diagram



A Board ✲ Mark List

	KV-AR25M31 (OCEANIA)	KV-AR25M68 (THAILAND)	KV-AR25M90 (HONG KONG)
C300	2.2 16V F:CHIP	#	2.2 16V F:CHIP
C329	4.7	#	4.7
C335	0.1 25V B:CHIP	#	0.1 25V B:CHIP
C347	100 16V	#	100 16V
C348	0.1 25V B:CHIP	#	0.1 25V B:CHIP
C349	0.1 25V B:CHIP	#	0.1 25V B:CHIP
C350	0.01 F:CHIP	#	0.01 F:CHIP
C351	10	#	10
C352	0.1 25V B:CHIP	#	0.1 25V B:CHIP
C638	#	0.0047 500V :E	#
CN301	7P	#	#
CN302	#	8P	#
CN307	7P	#	#
D100	MA111-TX	MMDL914T1	MA111-TX
D309	RD5.1SB-T2	UDZSTE-175.1B	RD5.1SB-T2
D504	ELIZ	FR104-A5	ELIZ
D521	ELIZ	FR104-A5	ELIZ
D522	ELIZ	FR104-A5	ELIZ
D523	ELIZ	FR104-A5	ELIZ
D611	10ELS2N-TB5	AU-01Z-V1	10ELS2N-TB5
D613	10ELS2N-TB5	AU-01Z-V1	10ELS2N-TB5
D614	10ELS2N-TB5	AU-01Z-V1	10ELS2N-TB5
D625	RD10S-B	DTZ10B	RD10S-B
D638	DIN20R	11ES2	DIN20R
FB615	1.1UH	1.1UH	0UH
IC001	IC CXP750097-603S	IC CXP750097-605S	IC CXP750097-603S
IC302	TDA9181T	#	TDA9181T
JR308	0 :CHIP	#	0 :CHIP
L303	100UH	#	100UH
L304	100UH	#	100UH
Q302	2SC2712-YG	#	2SC2712-YG
Q303	2SA1162-G	#	2SA1162-G
Q305	2SA1162-G	#	2SA1162-G
Q306	2SC2712-YG	#	2SC2712-YG
Q307	2SC2712-YG	2SD601A-Q	2SC2712-YG
Q309	UN2213	#	UN2213
Q310	2SC2712-YG	#	2SC2712-YG
Q314	2SA1162-G	#	2SA1162-G
R311	470 :CHIP	#	470 :CHIP
R312	390 :CHIP	#	390 :CHIP
R313	330 :CHIP	#	330 :CHIP
R314	27K :CHIP	#	27K :CHIP
R316	330 :CHIP	#	330 :CHIP
R317	56K :CHIP	#	56K :CHIP
R318	390 :CHIP	#	390 :CHIP
R371	27K :CHIP	#	27K :CHIP
R372	56K :CHIP	#	56K :CHIP
R375	100 :CHIP	#	#
R378	1.5K :CHIP	#	1.5K :CHIP
R379	10M :CHIP	#	10M :CHIP
R381	0 :CHIP	#	0 :CHIP
R382	4.7K :CHIP	#	4.7K :CHIP
R383	1K :CHIP	#	1K :CHIP
R384	470 :CHIP	#	470 :CHIP
R385	150 :CHIP	#	150 :CHIP
R391	0 :CHIP	#	0 :CHIP
R682	0.1 :FUSE	“Link, IC ”	0.1 :FUSE
T601	“Transformer, Line Filter”	“Coil, Line Filter”	“Transformer, Line Filter”

Note: The parts indicated as "#" in this circuit diagram are not listed here, as they are not used for these models.

F Board ✲ Mark List

	KV-AR25M31 (OCEANIA)	KV-AR25M68 (THAILAND)	KV-AR25M90 (HONG KONG)
T4601	“Transformer, Line Filter”	“Coil, Line Filter”	“Transformer, Line Filter”
T4602	“Transformer, Line Filter”	“Coil, Line Filter”	“Transformer, Line Filter”

Note: The parts indicated as "#" in this circuit diagram are not listed here, as they are not used for these models.

VM1 Board ✲ Mark List

	KV-AR25M31 (OCEANIA)	KV-AR25M68 (THAILAND)	KV-AR25M90 (HONG KONG)
CN5902	3P	#	3P
CN2801	#	3P	#

Note: The parts indicated as "#" in this circuit diagram are not listed here, as they are not used for these models.

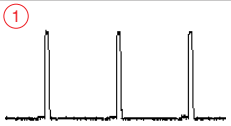
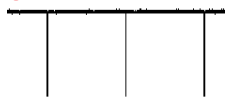
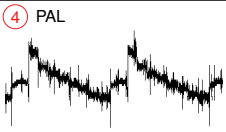
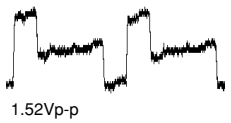
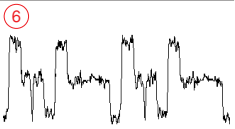
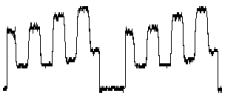
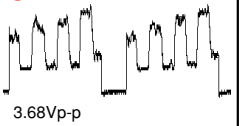
C6 Board ✲ Mark List

	KV-AR25M31 (OCEANIA)	KV-AR25M68 (THAILAND)	KV-AR25M90 (HONG KONG)
D717	HZS9.1NB2	NNCD9.1A-T1	HZS9.1NB2
Q701	2SC2611	#	2SC2611
Q702	2SC2611	#	2SC2611
Q703	2SC2611	#	2SC2611
R721	#	100K :RN	#

Note: The parts indicated as "#" in this circuit diagram are not listed here, as they are not used for these models.

5-4. VOLTAGE LIST AND WAVEFORM

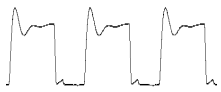
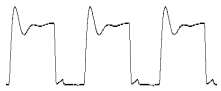
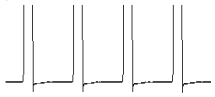
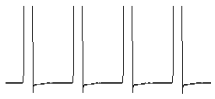
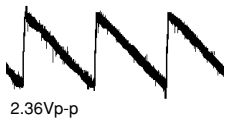
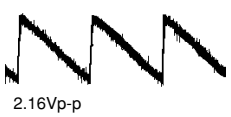
A BOARD VOLTAGE LIST AND WAVEFORM

Ref	Pin No.	Voltage[v]
IC001	1	0
	2	5.0
	3	0.4
	4	0.4
	5	5.0
	6	5.0
	7	4.0
	8	(5)[4.8]
	9	0.3
	①  5.2Vp-p	
	10	5.0
	②  4.88Vp-p	
	11	5.0
	12	0
	13	2.1
	14	2.1
	③ PAL 3.92Vp-p	
	③ NTSC3.58 4.16Vp-p	
	15	5.0
	16	5.0
	17	0
	18	4.5
	19	(2.1)[2.4]
	20	3.0
	21	5.0
	22	0
	23	5.0
	24	0.4
	25	5.0
	26	5.0
	27	5.0
	28	5.0
	29	0
	30	0
	31	0
	32	0
	33	5.0
	34	0
	35	0
	36	2.3
	37	2.5
	38	5.0
	39	5.0
	40	0
	41	0.4
	42	0.4
	43	0
	44	5.0
	45	5.0
	46	4.4
	47	5.0
	48	4.4
	49	0
	50	2.1
	51	0
	52	0
IC002	1	0
	2	5.0
	3	5.0
	4	7.2
	5	5.0
	6	0
	7	0
IC003	1	0
	2	0
	3	0
	4	0
	5	5.0
	6	5.0
	7	0
	8	5.0
IC100	1	4.9
	2	4.8
	3	0
IC301	1	3.3
	2	5.0
	3	(4)[3.1]
	4	5.0
	5	4.8
	6	4.3
	7	0
	8	3.9
	9	5.0
	10	3.8
	11	5.0
	12	0
	13	4.0
	14	2.4
	15	3.6
	16	3.4
	④ PAL  640mVp-p	
	④ NTSC3.58 424mVp-p	
	17	5.4
	18	7.6
	19	0.8
	20	3.7
	21	3.1
	22	3.8
	23	3.0
	24	1.4
	⑤ PAL  1.52Vp-p	
	⑤ NTSC3.58 1.22Vp-p	
	25	1.3
	⑥  1.42Vp-p	
	26	1.6
	⑦ PAL 544mVp-p	
	⑦ NTSC3.58 1.024Vp-p	
	27	0
	28	4.5
	29	4.5
	30	4.5
	31	8.7
	32	4.1
	⑧ 210mVp-p	
	33	4.1
	⑨ 5.1Vp-p	
	34	3.5
	⑩ PAL 3.04Vp-p	
	⑩ NTSC3.58 3.6Vp-p	
	35	8.7
	36	4.5
	37	4.5
	38	4.6
	39	4.5
	⑪ 2.7Vp-p	
	40	5.1
	⑫ PAL  3.44Vp-p	
	⑫ NTSC3.58  3.68Vp-p	

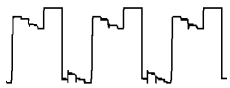
A BOARD VOLTAGE LIST AND WAVEFORM

Ref	Pin No.	Voltage[v]
	41	5.1
	⑬ 1.36Vp-p	
	42	0
	43	5.0
	44	4.4
	45	(8.6)[8.3]
	46	5.0
	47	8.8
	48	0.2
	49	(5)[4.4]
	50	0
	51	0
	52	(3.0)[2.7]
IC302	1	0.5
	2	0
	3	0.6
	4	0
	5	0.2
	6	0
	7	3.0
	8	0
	9	0
	10	2.2
	11	2.2
	12	2.2
	13	0
	14	0.2
	15	0
	16	0
IC502	1	1.1
	2	3.6
	3	1.5
	4	0
	5	3.0
	6	2.3
	7	6.3
	8	8.9
IC503	1	1.6
	2	13
	3	-14
	4	-15
	5	(0.5)[0.3]
	6	13
	7	1.6
IC601	1	1.9
	2	0
	3	264
	4	16.7
	5	0
IC602	1	120
	2	135
	3	0
IC603	I	12.0
	G	0
	O	8.8
IC604	I	7.6
	G	0
	O	5.0
IC901	1	5
	2	0
	3	0
PH600	1	72
	2	70.8
	3	3.9
	4	16.7
Q001	B	0.4
	C	0
	E	5.0
Q002	B	0
	C	5.0
	E	0

Ref	Pin No.	Voltage[v]
Q005	B	4.8
	C	0
	E	4.8
Q101	B	2.2
	C	8.8
	E	2.8
Q301	B	12.0
	C	0
	E	12.0
Q302	B	0
	C	8.8
	E	(0)[0.5]
Q303	B	8.8
	C	0
	E	8.8
Q304	B	4.1
	C	0
	E	3.5
Q305	B	8.8
	C	0
	E	8.7
Q306	B	0
	C	8.8
	E	(0)[0.5]
Q307	B	2.7
	C	8.8
	E	4.3
Q308	B	0.8
	C	0.3
	E	3.5
Q309	B	0
	C	0
	E	3.0
Q310	B	0
	C	2.2
	E	0.4
Q311	B	0
	C	8.8
	E	0
Q312	B	(8.6)[8.4]
	C	0
	E	5.2
Q313	B	0
	C	12.0
	E	0
Q314	B	2.2
	C	0
	E	1.7
Q315	B	0
	C	3.1
	E	0
Q316	B	4.7
	C	0
	E	4.1
Q317	B	4.7
	C	0
	E	4.1
Q501	B	6.4
	C	0
	E	22
Q502	B	0
	C	2.3
	E	0
Q503	B	0
	C	3.6
	E	0
Q505	S	0
	G	6.3
	D	22
Q506	B	0.6

Ref	Pin No.	Voltage[v]
	C	82
	⑭ PAL  164.0Vp-p	
	⑭ NTSC3.58  166.0Vp-p	
	E	0
Q507	B	13
	C	0.2
	E	12
Q509	B	0
	C	0.1
	E	0.6
Q511	B	-0.2
	C	100
	⑮ PAL  344.0Vp-p	
	⑮ NTSC3.58  320.0Vp-p	
	E	0
Q600	B	0
	C	12
	E	0
Q601	B	-0.7
	C	-0.4
	E	-0.8
Q602	B	0
	C	16.7
	E	0
Q603	B	16.7
	C	3.9
	E	16.7
Q604	B	134
	C	0
	E	134
Q605	S	-0.7
	G	0.2
	D	277
Q606	B	-0.7
	C	0.2
	E	-0.2
Q607	B	0.8
	C	0
	E	0
Q608	B	0
	C	0.8
	E	0
	⑯ PAL  2.36Vp-p	
	⑯ NTSC3.58  2.16Vp-p	

C6 BOARD VOLTAGE LIST AND WAVEFORM

Ref	Pin No.	Voltage[v]
IC1800	1	6.4
	2	6.4
	3	6.4
	4	6.4
	5	0
	6	6.4
	7	6.4
	8	6.4
	9	6.4
	10	13
J701	KR	(140)[136]
	① 164Vp-p	
	KG	(150)[147]
	②  142Vp-p	

Ref	Pin No.	Voltage[v]
	KB	(149)[144]
	③ 146Vp-p	
	H2	*
	④ 24.4Vp-p	
	G2	(275)[272]
Q701	B	(160)[154]
	C	(204)[202]
	E	160
Q702	B	170
	C	204
	E	170
Q703	B	(164)[160]
	C	203
	E	(170)[160]
Q704	B	8.9
	C	(160)[155]
	E	8.3
Q705	B	8.9
	C	170
	E	8.3

Ref	Pin No.	Voltage[v]
Q706	B	(8.8)[8.1]
	C	(165)[160]
	E	8.3
Q707	B	160
	C	(4.1)[4.4]
	E	(156)[153]
Q708	B	170
	C	4.0
	E	(165)[163]
Q709	B	(165)[160]
	C	4.2
	E	(163)[160]
Q710	B	1.5
	C	8.3
	E	1.1
Q711	B	1.3
	C	8.3
	E	1.0
Q712	B	1.4
	C	8.3
	E	1.1
Q714	B	0.7
	C	0.2
	E	0
Q1800	B	3.4
	C	0
	E	4.5
Q1802	B	0.4
	C	3.5
	E	0
Q1803	B	0
	C	6.4
	E	0

VM1 BOARD VOLTAGE LIST

Ref	Pin No.	Voltage[v]
Q5901	B	2.7
	C	8.8
	E	2.0
Q5902	B	135
	C	(67)[70]
	E	135
Q5903	B	2.7
	C	4.6
	E	2.0
Q5904	B	4.6
	C	0
	E	5.1
Q5905	B	5.6
	C	8.8
	E	5.1

Ref	Pin No.	Voltage[v]
Q5906	B	0.3
	C	(67)[70]
	E	0.2
Q5907	B	0
	C	(0.3)[0.5]
	E	0
Q5908	B	3.2
	C	0
	E	0
Q5909	B	0
	C	8.8
	E	3.4

H1 BOARD VOLTAGE LIST

Ref	Pin No.	Voltage[v]
Q3901	B	0.1
	C	5.0
	E	0.1
Q3902	B	(4.7)[0]
	C	(2.3)[4.9]
	E	(1.8)[0]

H2 BOARD VOLTAGE LIST

Ref	Pin No.	Voltage[v]
IC3901	I	5.0
	G	0
	O	5.0

B10 BOARD VOLTAGE LIST (KV-AR25M31/AR25M90)

Ref	Pin No.	Voltage[v]
IC1401	1	3.8
	2	3.9
	3	3.8
	4	3.9
	5	3.8
	6	8.2
	7	3.8
	8	3.9
	9	3.8
	10	3.9
	11	3.8
	12	8.2
	13	3.9
	14	3.9
	15	3.8
	16	3.9
	17	3.8
	18	8.1
	19	4.3
	20	4.4
	21	0
	22	3.9
	23	3.8
	24	3.9
	25	3.8
	26	3.9
	27	3.8
	28	3.9
	29	3.8
	30	3.8
	31	3.9
	32	3.9
	33	3.8
	34	0
	35	3.8
	36	0
	37	3.8
	38	3.9
	39	3.9
	40	3.8
	41	3.8
	42	3.9
	43	3.7
	44	8.8
	45	3.8
	46	3.9
	47	3.9
	48	3.8
IC1402	1	4.9
	2	2.5
	3	2.5
	4	0
	5	8.8
	6	5.0
	7	2.5
	8	2.5
IC1404	I	12.1
	G	0
	O	8.8
IC3200	1	4.4
	2	4.4
	3	4.4
	4	0
	5	4.4
	6	4.4
	7	4.4
	8	8.9
IC3202	1	4.4
	2	4.4
	3	4.4
	4	0
	5	4.4
	6	4.4
	7	4.4
	8	8.9
IC3204	1	4.5
	2	4.5
	3	4.4
	4	0
	5	4.4
	6	8.8
	7	4.3
	8	4.4
IC3205	1	8.8
	2	0.1
	3	0.4
	4	0.4
	5	0.4
	6	0.4
	7	0.3
	8	0
	9	0.1
	10	2.4
	11	0
	12	0
	13	8.7
	14	4.4
	15	4.4
	16	8.8
IC3301	1	2.7
	2	2.6
	3	3.0
	4	3.0
	5	0.4
	6	0
	7	0
	8	0
	9	4.5
	10	4.5
	11	4.5
	12	0
	13	0.4
	14	8.8
IC3302	1	4.4
	2	4.5
	3	4.5
	4	4.5
	5	4.5
	6	4.5
	7	4.5
	8	4.5
	9	4.5
	10	4.4
	11	4.4
	12	4.5
	13	4.5
	14	1.5
	15	1.7
	16	2.7
	17	2.7
	18	4.4
	19	*
	20	0
	21	8.9
	22	4.5
	23	2.5
	24	2.1
	25	2.1
	26	2.1
	27	2.0
	28	4.5
	29	4.4
	30	4.3
	31	4.4
	32	4.5
	33	4.4
	34	4.5
	35	4.5
	36	4.4
	37	4.4
	38	4.5
	39	4.4
	40	4.4
IC6200	1	1.5
	2	0
	3	0
	4	0
	5	4.4
	6	8.8
	7	4.3
	8	4.4
	9	25.8
	10	0
	11	4.2
	12	12.0
Q1316	B	8.8
	C	4.6
	E	8.2
Q1317	B	3.9
	C	8.7
	E	4.6
Q1318	B	3.5
	C	6.1
	E	4.2
Q1323	B	2.0
	C	8.2
	E	2.7
Q1324	B	5.4
	C	8.8
	E	6.1
Q1365	B	3.5
	C	5.3
	E	4.2
Q1372	B	2.8
	C	8.8
	E	3.5
Q1401	B	0
	C	8.8
	E	0
Q1402	B	4.5
	C	0
	E	3.8
Q1403	B	3.1
	C	8.8
	E	3.7
Q1404	B	3.2
	C	8.8
	E	3.8
Q1408	B	5.2
	C	8.8
	E	5.8
Q1409	B	1.8
	C	5.8
	E	2.5
Q3201	S	4.4
	G	4.2
	D	4.3
Q3202	B	3.6
	C	8.6
	E	4.1
Q3203	B	3.6
	C	8.6
	E	4.1
Q3204	S	3.6
	G	4.0
	D	4.4
Q6201	B	0
	C	4.2
	E	0
Q6206	B	0
	C	8.8
	E	0
Q6208	B	0
	C	8.6
	E	0

V1 BOARD VOLTAGE LIST (KV-AR25M31)

Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]
IC801	1	0.5		30	2.0	Q803	B	0
	2	4.8		31	2.0		C	0.01
	3	(0.4)[0.7]		32	0.02		E	0.6
	4	(0.4)[0.7]		33	0.02	Q805	B	0
	5	4.8		34	0.02		C	1.0
	6	(0.3)[0.9]		35	0		E	0.3
	7	(0.3)[0.9]		36	1.0	Q806	B	0
	8	(0.3)[0.9]		37	0.2		C	4.8
	9	0		38	4.8		E	0.02
	10	0		39	4.8	Q807	B	0
	11	0		40	0.02		C	4.8
	12	0		41	2.2		E	0.02
	13	0		42	2.2	Q808	B	0
	14	0		43	0.02		C	4.8
	15	0		44	4.6		E	0.02
	16	0		45	0	Q810	B	0
	17	0		46	0		C	4.0
	18	0		47	4.8		E	0.2
	19	0		48	0	Q811	B	4.8
	20	1.1		49	4.3		C	6.5
	21	1.1		50	4.5		E	5.5
	22	0		51	0	Q815	B	0
	23	2.1		52	0		C	4.8
	24	1.2	Q801	B	0		E	0.03
	25	2.0		C	4.8	Q817	B	0
	26	2.4		E	0.02		C	0.2
	27	0.02	Q802	B	2.0		E	2.8
	28	0		C	4.9			
	29	0.9		E	0			

B1 BOARD VOLTAGE LIST (KV-AR25M31/AR25M90)

Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]
IC1502	1	3.1	Q1502	B	2.3	Q1514	B	0.6
	2	3.0		C	2.3		C	0.6
	3	3.2		E	2.5		E	0.6
	4	4.6	Q1503	B	0.6	Q1515	B	0.6
	5	4.6		C	0.6		C	0.6
	6	0		E	0.6		E	0.6
	7	0	Q1505	B	0.6	Q1516	B	0.5
	8	0		C	0.8		C	0.5
	9	8.1		E	0		E	0.5
	10	7.9	Q1507	B	0.7	Q1520	B	0.5
	11	7.9		C	0.8		C	0.4
	12	7.6		E	0.7		E	0
	13	7.6	Q1509	B	0.8	Q1522	B	0.4
	14	7.3		C	0.8		C	0
	15	7.6		E	0		E	0.5
	16	7.6	Q1510	B	0.7	Q1523	B	0.4
Q1501	B	2.5		C	0.7		C	0
	C	2.4		E	0		E	0.5
	E	2.4	Q1511	B	0.7			
				C	0.7			
				E	0			

P5 BOARD VOLTAGE LIST (KV-AR25M68)

Ref	Pin No.	Voltage[v]
IC4101	1	3.3
	2	0
	3	7.9
IC4102	1	0.9
	2	0
	3	1.3
	4	0
	5	4.9
	6	5.0
	7	1.4
	8	0
	9	0.7
	10	(3.6)[0]
	11	(0)[4.9]
	12	1.5
	13	0
	14	1.5
	15	0
	16	1.5
IC4104	1	2.0
	2	1.9
	3	1.4
	4	0.2
	5	2.1
	6	5.0
	7	2.5
	8	0
	9	0.3
	10	0.8
	11	2.3
	12	5.0
	13	4.4
	14	4.6
	15	0
	16	0
	17	2.5
	18	2.5
	19	1.4
	20	2.3
	21	1.6
	22	1.8
	23	1.8
	24	0.1
	25	2.2
	26	2.1
	27	2.1
	28	0
	29	2.3
	30	2.2
	31	1.4
	32	5.0
	33	2.2
	34	2.3
	35	2.3
	36	0
	37	1.1
	38	4.0
	39	1.7
	40	3.5
	41	2.3
	42	2.5
	43	1.7
	44	2.2
	45	(3.6)[0]
	46	(2.2)[3.1]
	47	3.7
	48	1.7
IC4105	1	5.0
	2	0.3
	3	0
	4	0.3
	5	5.0
IC4106	I	5.1
	G	0
	O	7.9
IC4201	I	3.3
	G	0
	O	4.9
IC4202	1	0
	2	0
	3	0
	4	3.3
	5	3.3
IC4203	1	3.3
	2	1.7
	3	3.3
	4	0
	5	3.3
	6	3.3
	7	0.1
	8	0.5
	9	0
	10	0.4
	11	1.3
	12	2.5
	13	3.3
	14	0
	15	0.2
	16	0
	17	1.3
	18	1.3
	19	2.4
	20	3.3
	21	0
	22	0.2
	23	0
	24	1.3
	25	1.5
	26	2.5
	27	3.2
	28	0
	29	0.2
	30	0
	31	0
	32	3.3
	33	0
	34	3.3
	35	0
	36	3.3
	37	3.3
	38	3.3
	39	3.3
	40	3.3
	41	3.3
	42	3.3
	43	3.3
	44	3.3
	45	0
	46	3.3
	47	3.3
	48	3.3
	49	3.3
	50	3.3
	51	3.3
	52	3.3
	53	3.3
	54	(0)[3.3]
	55	0
	56	0
	57	2
	58	1.3
	59	1.3
	60	2.4
	61	2.3
	62	(2.0)[1.9]
	63	1.4
	64	1.5
	65	1.5
	66	0
	67	(2.0)[1.9]
	68	0.1
	69	1.5
	70	1.5
	71	1.6
	72	1.8
	73	3.4
	74	0
	75	0
	76	1.4
	77	0.2
	78	0.1
	79	1.8
	80	0
	81	0
	82	3.3
	83	(0.1)[0]
	84	0
	85	(0)[3.3]
	86	3.3
	87	0.4
	88	0
	89	(0.1)[0]
	90	3.3
	91	3.3
	92	0.3
	93	0
	94	0
	95	1.1
	96	1.1
	97	3.3
	98	3.3
	99	0
	100	2.7
	101	2.7
	102	0
	103	0
	104	0
	105	2.7
	106	0
	107	0
	108	0.1
	109	0
	110	0
	111	0
	112	0
	113	0
	114	0
	115	2.7
	116	2.7
	117	0
	118	3.3
	119	3.3
	120	0
	121	0.4
	122	0.2
	121	0.7
	124	0
	125	3.3
	126	3.3
	127	0
	128	1.5
	129	1.5
	130	0
	131	3.3
	132	0
	133	3.3
	134	3.3
	135	3.3
	136	3.3
	137	3.3
	138	0
	139	0.7
	140	0
	141	0
	142	3
	143	3
	144	0
IC4204	1	3.3
	2	0
	3	1.5
	4	0.4
	5	1.7
	6	1.6
	7	0
	8	0
	9	0

P5 BOARD VOLTAGE LIST (KV-AR25M68)

Ref	Pin No.	Voltage[v]
	10	0
	11	0
	12	1.6
	13	2.1
	14	3.3
IC4301	1	3.3
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
	8	0
	9	0
	10	0
	11	0
	12	0
	13	3.3
	14	2.5
	15	0.7
	16	3.3
	17	3.3
	18	0
	19	0.2
	20	0
	21	1.5
	22	(1.8)[2.0]
	23	0
	24	3.3
	25	1.3
	26	(2.1)[1.9]
	27	1.3
	28	1.5
	29	2.4
	30	1.5
	31	1.7
	32	1.9
	33	3.3
	34	0
	35	(2.0)[1.9]
	36	(2.0)[1.9]
	37	(2.0)[1.9]
	38	2.0
	39	(2.1)[1.8]
	40	1.3
	41	3.3
	42	0
	43	0.3
	44	(3.3)[0]
	45	1.5
	46	0
	47	3.3
	48	0
	49	3.3
	50	3.3
	51	3.3
	52	0
	53	3.3
	54	3.3
	55	3.3
	56	0.1
	57	0.3
	58	1.5
	59	0
	60	3.3
	61	3.3
	62	3.3
	63	0
	64	1.3
	65	(2.2)[1.8]
	66	2.1
	67	(2.1)[1.8]
	68	(2.1)[1.8]
	69	(2)[1.8]
	70	1.9
	71	1.7
	72	1.6
	73	3.4
	74	2.5
	75	1.2

Ref	Pin No.	Voltage[v]
	76	1.4
	77	2.2
	78	1.3
	79	1.9
	80	(2.1)[1.9]
IC4401	I	1.8
	G	0
	O	3.3
IC4402	1	1.7
	2	3.1
	3	3
	4	3.3
	5	3.3
	6	1.7
	7	0.2
	8	0
	9	0
	10	1.7
	11	1.6
	12	1.7
	13	(2.1)[1.8]
	14	1.8
	15	1.7
	16	1.7
	17	1.5
	18	3.4
	19	0
	20	0
	21	0
	22	1.5
	23	1.6
	24	1.9
	25	1.7
	26	1.8
	27	1.7
	28	1.6
	29	1.5
	30	0
	31	1.0
	32	1.4
	33	1.8
	34	3.4
	35	1.5
	36	0
	37	#
	38	#
	39	#
	40	#
	41	#
	42	#
	43	#
	44	#
	45	#
	46	#
	47	#
	48	#
	49	#
	50	#
	51	#
	52	#
	53	#
	54	#
	55	#
	56	#
	57	#
	58	#
	59	#
	60	#
	61	#
	62	#
	63	#
	64	#
	65	#
	66	#
	67	#
	68	#
	69	#
	70	#
	71	#
	72	#

Ref	Pin No.	Voltage[v]
	73	1.8
	74	3.3
	75	0
	76	0
	77	1.8
	78	0
	79	0.5
	80	0
	81	0
	82	0
	83	0
	84	3.3
	85	2.2
	86	0
	87	1.7
	88	1.7
	89	0
	90	3.3
	91	0
	92	0
	93	0.7
	94	0
	95	1.7
	96	0
	97	0
	98	3.3
	99	3.3
	100	0
	101	3.3
	102	0
	103	0.3
	104	0
	105	3.3
	106	0
	107	0.1
	108	0
	109	1.7
	110	3.3
	111	0
	112	0
	113	1.4
	114	(3.3)[0]
	115	(0.2)[0.3]
	116	1.7
	117	0
	118	3.3
	119	1.2
	120	(2.2)[1.8]
	121	2.1
	122	(2.0)[1.8]
	123	(2.1)[1.8]
	124	(2.1)[1.8]
	125	(2.0)[1.7]
	126	3.4
	127	0
	128	1.7
	129	1.4
	130	2.1
	131	2.3
	132	1.4
	133	2.1
	134	2.1
	135	1.8
	136	1.7
	137	1.8
	138	0
	139	0
	140	0
	141	0
	142	0
	143	3.4
	144	0
IC4403	1	4.3
	2	0
	3	2.1
	4	0.3
	5	1.7
	6	2.0
	7	0
	8	0

P5 BOARD VOLTAGE LIST (KV-AR25M68)

Ref	Pin No.	Voltage[v]
	9	0
	10	0
	11	0
	12	2.1
	13	2.3
	14	4.3
IC4404	1	0.3
	2	0
	3	0
	4	3
	5	3.3
IC4405	1	5.0
	2	0
	3	8.8
Q4105	B	5.0
	C	0
	E	4.4
Q4106	B	(1.4)[2.3]
	C	4.9
	E	(2.2)[3.0]
Q4107	B	1.4
	C	0
	E	1
Q4108	B	0
	C	(0)[4.9]
	E	0
Q4109	B	0
	C	4.9
	E	0.3
Q4110	B	5.0
	C	0.4
	E	4.5
Q4111	B	4.9
	C	0
	E	4.9
Q4112	B	0.1
	C	4.9
	E	0.2
Q4114	B	2.5
	C	0
	E	1.8
Q4116	B	2.5
	C	0
	E	1.8
Q4117	B	2.3
	C	0
	E	1.7
Q4122	B	2.4
	C	4.9
	E	3.0
Q4123	B	2.4
	C	5.0
	E	3.0
Q4124	B	2.4
	C	5.0
	E	3.0
Q4129	B	1.7
	C	8.2
	E	2.3
Q4130	B	1.8
	C	8.2
	E	2.4
Q4131	B	1.8
	C	8.2
	E	0
Q4132	B	8.8
	C	2.9
	E	8.2
Q4133	B	8.8
	C	3.0
	E	8.2
Q4134	B	8.8
	C	3.0
	E	8.2
Q4135	B	1.5
	C	8.2
	E	2.2
Q4136	B	2.1
	C	8.2
	E	2.7
Q4137	B	2.1
	C	8.2
	E	2.7
Q4138	B	8.8
	C	3.2
	E	8.2
Q4139	B	8.9
	C	3.9
	E	8.2
Q4140	B	8.9
	C	3.3
	E	8.2
Q4141	B	2.5
	C	8.8
	E	3.2
Q4142	B	3.3
	C	8.8
	E	4.0
Q4143	B	2.7
	C	8.9
	E	3.3
Q4144	B	4.9
	C	0
	E	4.9
Q4145	B	0
	C	4.9
	E	0.2
Q4201	B	2.3
	C	4.9
	E	2.9
Q4202	B	2.4
	C	4.9
	E	3.0
Q4203	B	2.4
	C	4.9
	E	3.0
Q4204	B	1.3
	C	4.9
	E	2.0
Q4205	B	1.5
	C	4.9
	E	2.1
Q4206	B	1.5
	C	4.9
	E	2.1
Q4207	B	3.0
	C	4.5
	E	3.3
Q4208	B	1.3
	C	3.3
	E	2.0
Q4209	B	3.0
	C	4.5
	E	3.3
Q4210	B	1.3
	C	3.3
	E	2.0
Q4211	B	0.4
	C	3.3
	E	1.0
Q4212	B	0
	C	3.3
	E	0
Q4213	B	0.2
	C	4.9
	E	0.1
Q4214	B	0.4
	C	5.0
	E	0.3
Q4215	B	1.3
	C	0
	E	0.4
Q4216	B	2.0
	C	0
	E	1.4
Q4217	B	1.9
	C	0
	E	1.4
Q4218	B	2.7
	C	4.9
	E	3.3
Q4219	B	2.7
	C	4.9
	E	3.3
Q4401	B	1.7
	C	0
	E	1.0
Q4402	B	1.1
	C	0
	E	0.4
Q4403	B	1.1
	C	0
	E	0.4
Q4404	B	1.6
	C	0
	E	1.0
Q4405	B	1.6
	C	0
	E	1.0
Q4406	B	2.2
	C	0
	E	1.5
Q4407	B	3.7
	C	0
	E	3.1
Q4408	B	0
	C	4.9
	E	0.5
Q4409	B	2.1
	C	0
	E	3.3
Q4410	B	4.3
	C	5.0
	E	5.0
Q4413	B	3.6
	C	0
	E	3.0
Q4414	B	1.6
	C	2.9
	E	0
Q4415	B	0.1
	C	1.6
	E	0.7
Q4416	B	0.7
	C	0
	E	0.1
Q4417	B	2.8
	C	5
	E	3.5
Q4418	B	0.1
	C	1.7
	E	0.7
Q4419	B	2.2
	C	0
	E	1.6
Q4420	B	1.0
	C	0
	E	0.4

B8 BOARD VOLTAGE LIST (KV-AR25M68)

Ref	Pin No.	Voltage[v]
IC1401	1	3.9
	2	3.9
	3	3.9
	4	3.9
	5	3.9
	6	8.1
	7	3.8
	8	3.9
	9	3.9
	10	3.9
	11	3.9
	12	8.2
	13	3.9
	14	3.9
	15	3.9
	16	3.9
	17	3.9
	18	8.1
	19	4.5
	20	4.5
	21	0
	22	3.9
	23	3.8
	24	3.9
	25	3.8
	26	3.9
	27	3.8
	28	3.9
	29	3.7
	30	3.8
	31	3.8
	32	3.8
	33	3.8
	34	0
	35	3.8
	36	0
	37	3.8
	38	3.9
	39	3.9
	40	3.8
	41	3.8
	42	3.9
	43	3.7
	44	8.8
	45	3.8
	46	3.8
	47	3.8
	48	3.8
IC1402	1	(4.4)[4.8]
	2	2.4
	3	2.4
	4	0
	5	2.4
	6	2.4
	7	4.8
	8	8.8
IC1403	I	8.0
	G	0
	O	5
IC1404	I	12.5
	G	0
	O	8.8
IC3200	1	4.4
	2	4.4
	3	4.4
	4	0
	5	4.4
	6	4.4
	7	4.4
	8	8.8
IC3202	1	4.4
	2	4.4
	3	4.3
	4	0
	5	4.3
	6	4.4
	7	4.4
	8	8.8
IC3204	1	4.4
	2	4.4
	3	4.3
	4	0
	5	4.3
	6	4.4
	7	4.4
	8	8.8
IC3205	1	0.1
	2	0.1
	3	8.7
	4	0.4
	5	0.4
	6	0.4
	7	0.3
	8	0
	9	0
	10	2.3
	11	0
	12	0
	13	8.8
	14	4.0
	15	4.5
	16	8.8
IC3301	1	2.9
	2	2.7
	3	2.9
	4	2.8
	5	8.7
	6	0
	7	0
	8	4.4
	9	4.4
	10	4.4
	11	4.4
	12	0
	13	8.7
	14	8.8
IC3302	1	4.3
	2	4.4
	3	4.4
	4	4.4
	5	4.4
	6	4.4
	7	4.4
	8	4.4
	9	4.4
	10	4.4
	11	4.4
	12	4.4
	13	4.4
	14	0.6
	15	1.3
	16	1.5
	17	1.5
	18	4.6
	19	4.5
	20	0
	21	8.8
	22	4.4
	23	3.7
	24	3.7
	25	3.7
	26	4.8
	27	0.5
	28	4.4
	29	4.4
	30	4.4
	31	4.4
	32	4.4
	33	4.4
	34	4.4
	35	4.4
	36	4.4
	37	4.4
	38	4.4
	39	4.4
	40	4.3
IC6200	1	1.6
	2	0
	3	0
	4	0
	5	1.6
	6	8.9
	7	12.3
	8	4.9
	9	26.5
	10	0
	11	4.0
	12	12.0
Q1316	B	8.2
	C	3.8
	E	8.8
Q1317	B	3.8
	C	8.8
	E	3.1
Q1318	B	4.1
	C	6.1
	E	3.5
Q1323	B	2.5
	C	8.2
	E	1.8
Q1324	B	6.1
	C	8.8
	E	5.4
Q1365	B	4.2
	C	5.3
	E	3.5
Q1372	B	3.5
	C	8.8
	E	2.8
Q1401	B	0
	C	8.8
	E	0
Q1402	B	3.8
	C	0
	E	4.4
Q1403	B	3.7
	C	8.8
	E	3.1
Q1404	B	3.8
	C	8.8
	E	3.1
Q1408	B	5.8
	C	8.8
	E	5.1
Q1409	B	2.4
	C	5.8
	E	1.7
Q3201	S	4.2
	G	3.9
	D	4.3
Q3202	B	3.9
	C	8.6
	E	3.3
Q3203	B	3.9
	C	8.6
	E	3.9
Q3204	S	4.3
	G	4.0
	D	4.3
Q6201	B	0
	C	4.1
	E	0
Q6203	B	0
	C	0
	E	0
Q6204	B	0
	C	0
	E	0
Q6208	B	0
	C	8.9
	E	0

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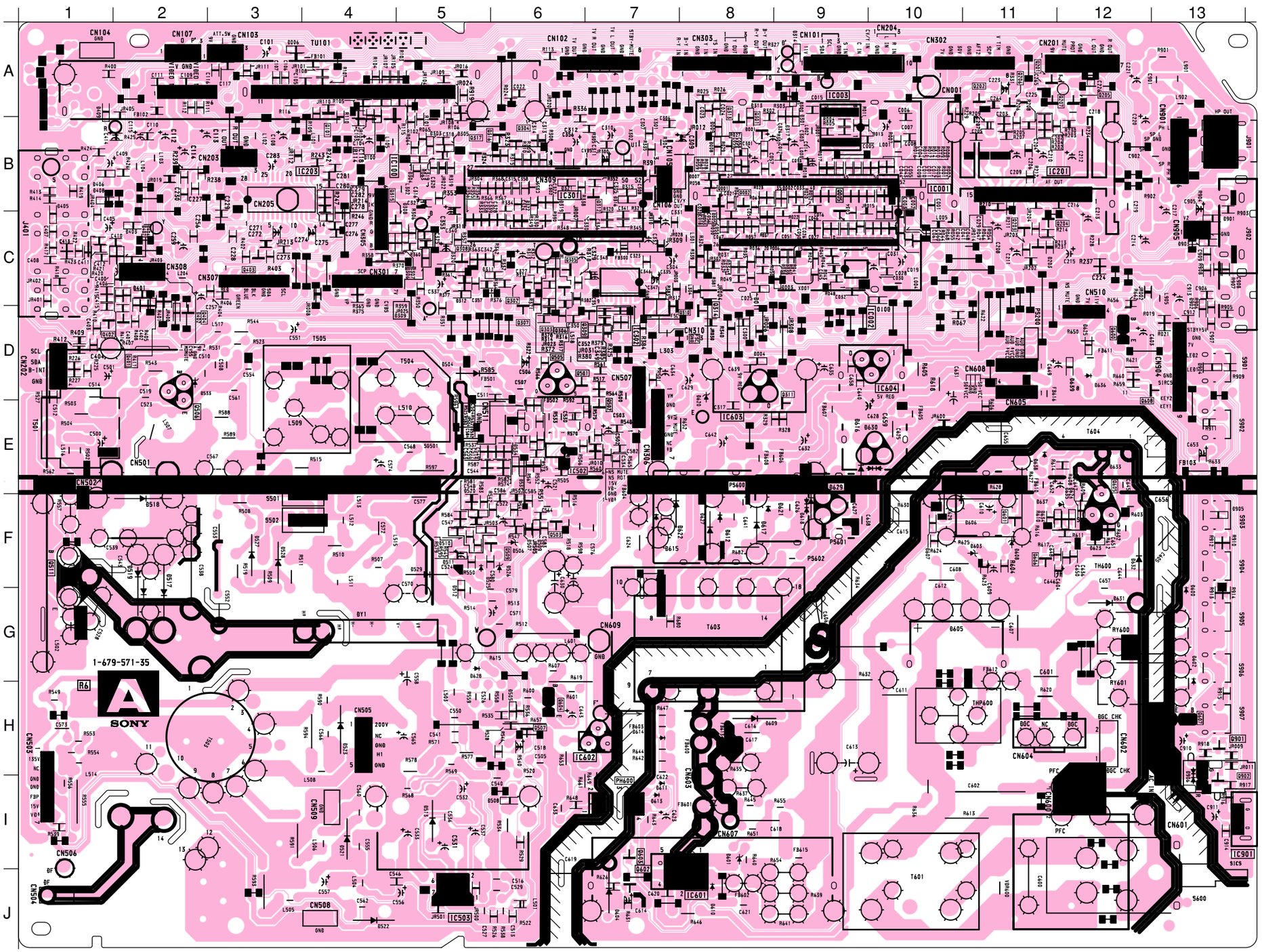
5-5. PRINTED WIRING BOARDS AND PARTS LOCATION

PRINTED WIRING BOARDS

A [SYSTEM CONTROLLER, Y/C JUNGLE, DEFLECTION, TUVIF, FRONT AMP, POWER SUPPLY]

NOTE:
The circuit indicated at left contains high voltage of over 1220 Vp-p. Please pay attention when inspecting or repairing it to prevent an electric shock.

– A Board – (FOR KV-AR25M31/AR25M90)



A BOARD

IC					
IC001	B-10	Q600	D-12	D512	G-5
IC002	D-10	Q601	F-11	D517	F-2
IC100	B-4	Q602	I-7	D518	F-2
IC201	B-12	Q603	E-8	D519	F-2
IC203	B-4	Q603	I-7	D520	E-6
IC301	B-6	Q604	H-6	D521	I-4
IC302	D-7	Q605	E-12	D522	J-4
IC502	E-6	Q606	F-11	D523	H-4
IC503	J-5	Q607	H-13	D525	F-5
IC601	J-8	Q608	F-12	D526	F-6
IC602	H-7	Q901	H-13	D527	F-3
IC604	D-10	Q902	H-13	D528	F-3
IC901	I-13			D529	F-5
		DIODE		D531	E-6
TRANSISTOR				D532	E-6
		D001	B-8	D533	D-3
Q001	B-8	D002	B-9	D534	E-6
Q002	B-8	D003	C-9	D600	G-13
Q003	A-9	D004	D-8	D601	I-8
Q005	B-9	D005	C-8	D602	G-13
Q101	B-4	D006	A-3	D603	F-11
Q201	A-11	D007	B-8	D604	J-7
Q202	A-11	D008	B-8	D605	G-10
Q203	C-11	D009	B-8	D606	F-11
Q204	C-12	D010	D-10	D607	F-10
Q205	A-12	D011	C-8	D608	F-11
Q206	A-11	D100	B-4	D609	H-8
Q207	A-12	D203	C-11	D611	I-7
Q301	B-8	D300	A-9	D612	F-8
Q302	C-6	D301	B-9	D613	I-7
Q303	D-6	D303	B-5	D614	H-7
Q304	B-6	D304	B-5	D615	F-7
Q305	C-6	D306	C-5	D616	E-9
Q306	D-6	D307	C-5	D617	F-8
Q307	D-6	D308	B-5	D618	F-9
Q308	C-5	D309	C-5	D620	D-8
Q309	D-6	D311	C-5	D621	F-9
Q310	D-8	D312	C-5	D622	F-7
Q311	D-9	D313	A-8	D624	E-12
Q312	B-7	D314	A-9	D625	D-12
Q313	A-8	D317	A-9	D627	F-8
Q314	D-8	D317	B-5	D628	G-5
Q315	B-4	D322	B-6	D628	G-5
Q316	B-5	D401	C-2	D629	E-9
Q317	B-5	D402	D-2	D630	E-10
Q401	D-2	D403	C-2	D631	G-12
Q402	D-1	D404	C-2	D632	F-12
Q403	C-3	D405	B-1	D633	E-12
Q404	D-2	D406	B-1	D634	F-11
Q501	D-6	D407	C-2	D635	F-12
Q502	E-7	D408	B-1	D636	D-13
Q503	F-6	D409	A-1	D637	F-11
Q505	D-6	D504	C-5	D638	E-11
Q506	E-2	D505	H-6	D639	D-12
Q507	H-6	D506	F-6	D901	C-13
Q509	F-6	D507	F-6	D902	C-13
Q511	F-1	D508	F-6	D903	C-13
		D509	F-6	D904	D-13
		D510	F-5	D905	F-13
		D511	F-5	D906	H-13

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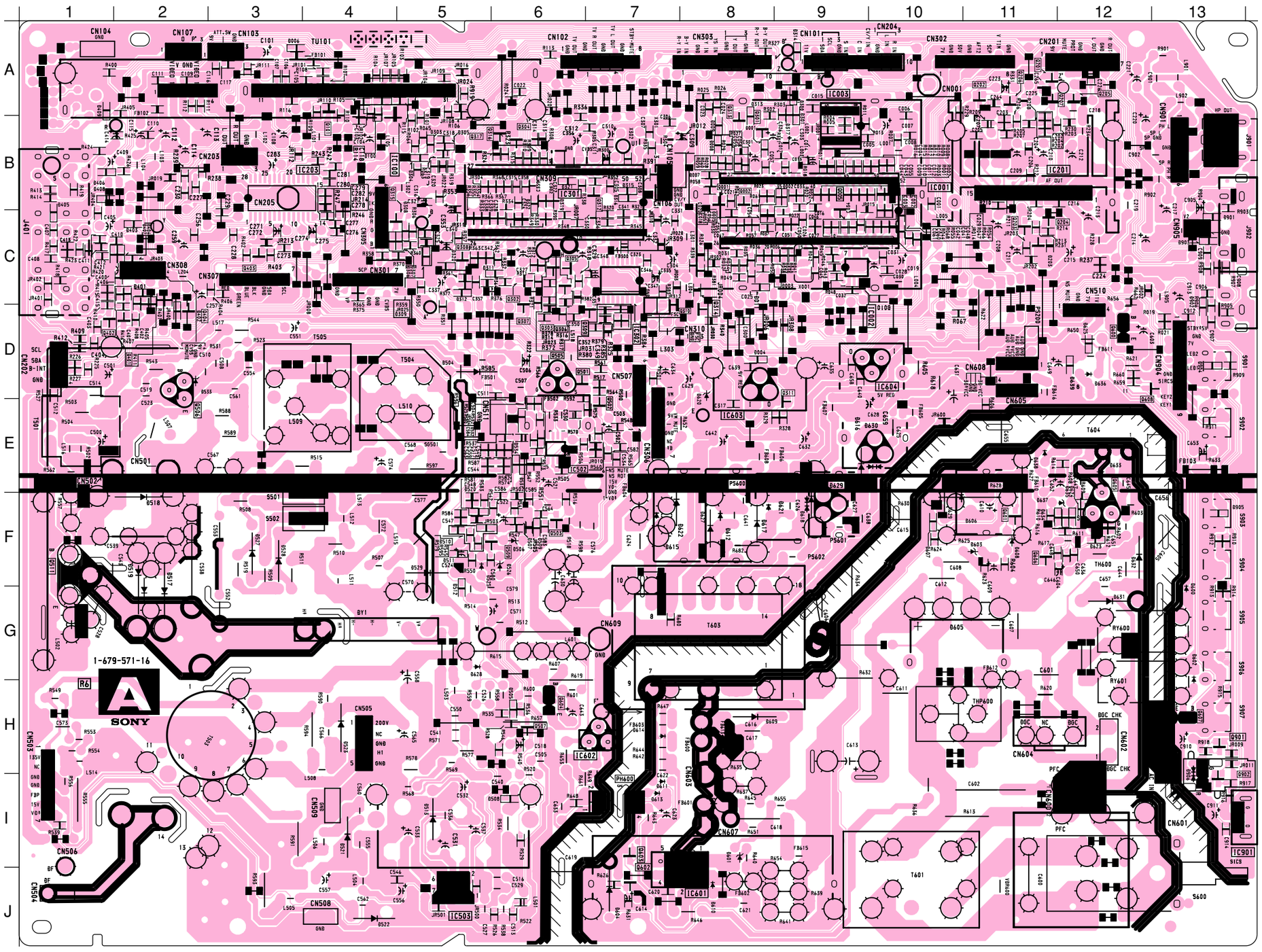
NOTE:
The circuit indicated at left contains high voltage of over 1220 Vp-p. Please pay attention when inspecting or repairing it to prevent an electric shock.

PRINTED WIRING BOARDS

A [SYSTEM CONTROLLER, Y/C JUNGLE, DEFLECTION, TUVIF, FRONT AMP, POWER SUPPLY]

– A Board – (FOR KV-AR25M68)



A BOARD

IC

IC001	B-10
IC002	D-10
IC003	A-9
IC100	B-4
IC201	B-12
IC203	B-4
IC301	B-6
IC302	D-7
IC502	E-6
IC503	J-5
IC601	J-8
IC602	H-7
IC603	E-8
IC604	D-10

TRANSISTOR

Q001	B-8
Q002	B-8
Q005	B-9
Q101	B-4
Q201	A-11
Q202	A-11
Q203	C-11
Q204	C-12
Q205	A-12
Q206	A-11
Q207	A-12
Q301	B-8
Q302	C-6
Q303	D-6
Q304	B-6
Q305	C-6
Q306	D-6
Q307	D-6
Q308	C-5
Q310	D-8
Q311	D-9
Q312	B-7
Q313	A-8
Q314	D-8
Q315	B-4
Q316	B-5
Q317	B-5
Q401	D-2
Q402	D-1
Q403	C-3
Q404	D-2
Q501	D-6
Q502	E-7
Q503	F-6
Q505	D-6
Q506	E-2
Q507	H-6
Q509	F-6
Q511	F-1
Q600	D-12
Q601	F-11
Q602	I-7
Q603	I-7
Q604	H-6
Q605	E-12
Q606	F-11
Q607	H-13
Q608	E-12
Q901	H-13
Q902	H-13

DIODE

D001	B-8
D002	B-9
D003	C-9
D004	D-8
D005	B-8
D006	A-3
D007	B-8
D008	B-8
D009	B-8
D010	D-10
D011	C-8
D100	B-4
D203	C-11
D300	A-9
D301	B-9
D303	B-5
D304	B-5
D305	B-5
D306	C-5
D307	C-5
D308	B-5
D309	D-5
D311	C-5
D312	C-5
D313	A-8
D314	A-9
D315	B-7
D316	B-7
D317	B-9
D319	B-6
D320	C-5
D321	B-6
D322	B-6
D401	C-2
D402	D-2
D403	C-2
D404	C-2
D405	B-1
D406	B-1
D407	C-2
D408	B-1
D409	A-1
D504	D-5
D505	H-6
D506	F-6
D507	F-6
D508	I-6
D510	F-5
D511	F-5
D512	F-5
D513	I-5
D517	F-2
D518	F-2
D519	F-2
D520	E-5
D521	I-4
D522	J-4
D523	H-4
D525	F-5
D526	F-6
D527	F-3
D528	F-3
D529	F-5
D531	E-6
D532	E-5
D533	D-2
D534	E-6
D600	G-13
D601	I-8
D602	G-13
D603	F-11
D604	J-7
D605	G-10
D606	E-11
D607	F-10
D608	F-11
D609	H-8
D610	J-8
D611	J-7
D612	F-8
D613	I-7
D615	E-7
D616	E-9
D617	F-8
D618	F-9
D620	E-8
D621	F-9
D622	F-7
D623	F-12
D624	E-12
D625	D-12
D627	F-8
D628	G-5
D629	E-9
D630	E-10
D631	G-12
D632	F-12
D633	E-12
D634	F-11
D635	E-12
D636	D-12
D637	F-11
D638	E-11
D639	D-12
D901	C-13
D902	C-13
D903	C-13
D904	D-13
D905	F-13
D906	H-13
PH600	I-7

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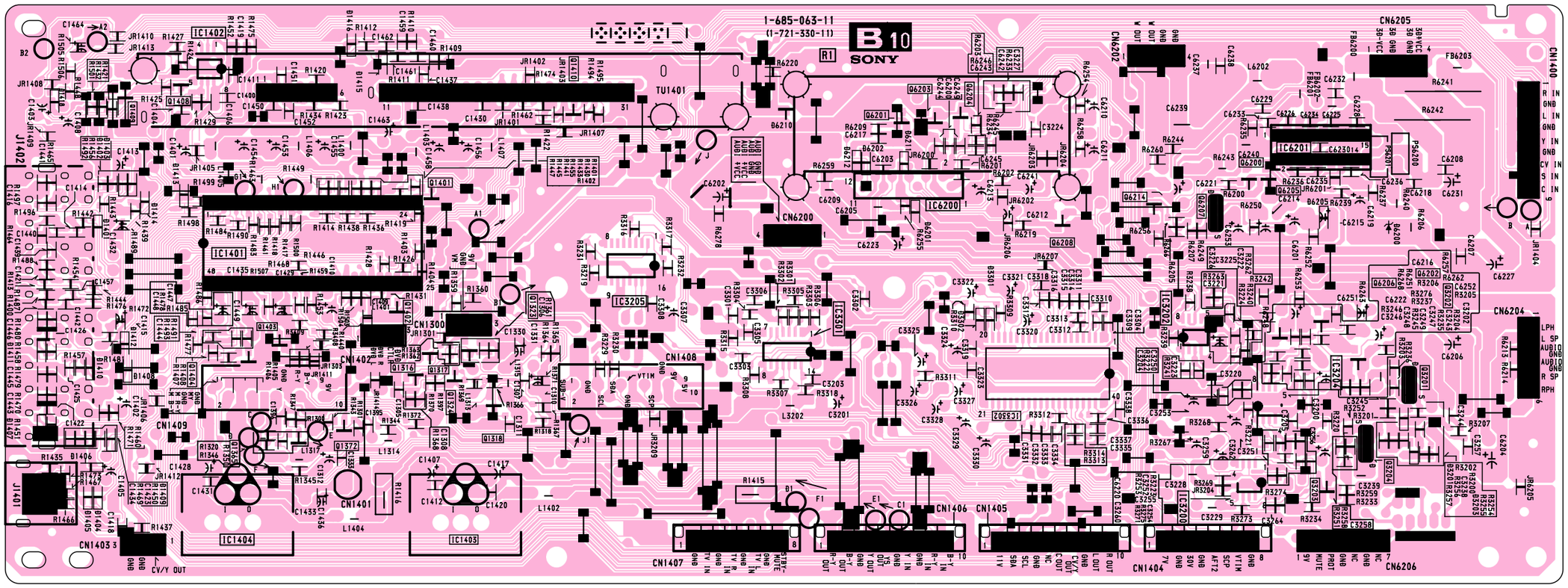
PRINTED WIRING BOARDS

B10 [AUDIO PROCESSOR, AUDIO AMP, SUB TUNER, AV IN/OUT, VM DRIVER]

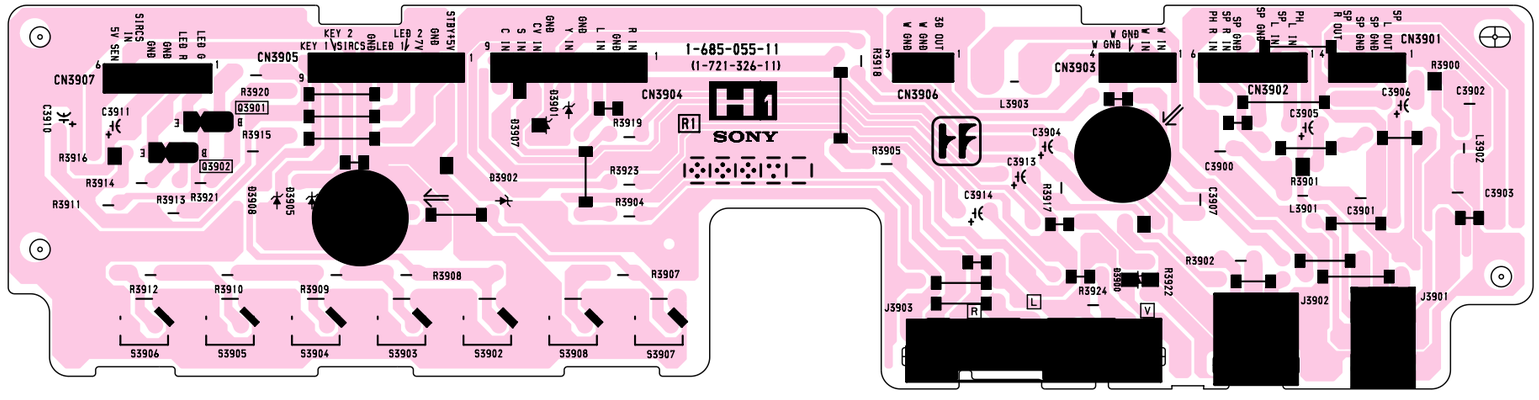
H1 [FRONT AV IN, KEY SW]

J [DVD TERMINAL]

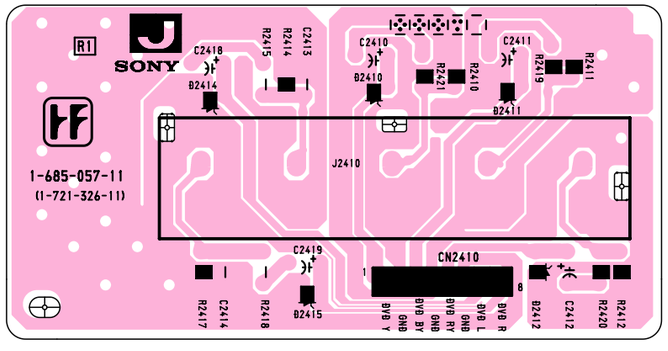
– B10 Board – (KV-AR25M31/AR25M90)



– H1 Board –



– J Board –



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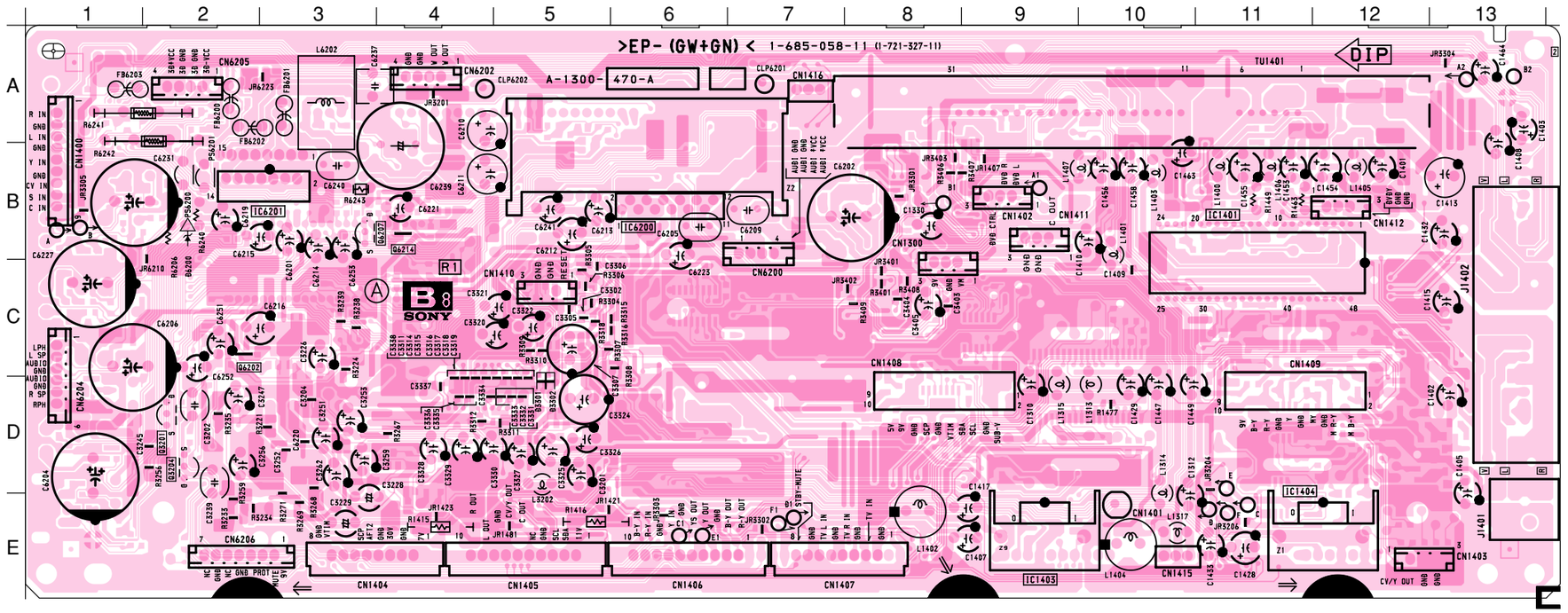
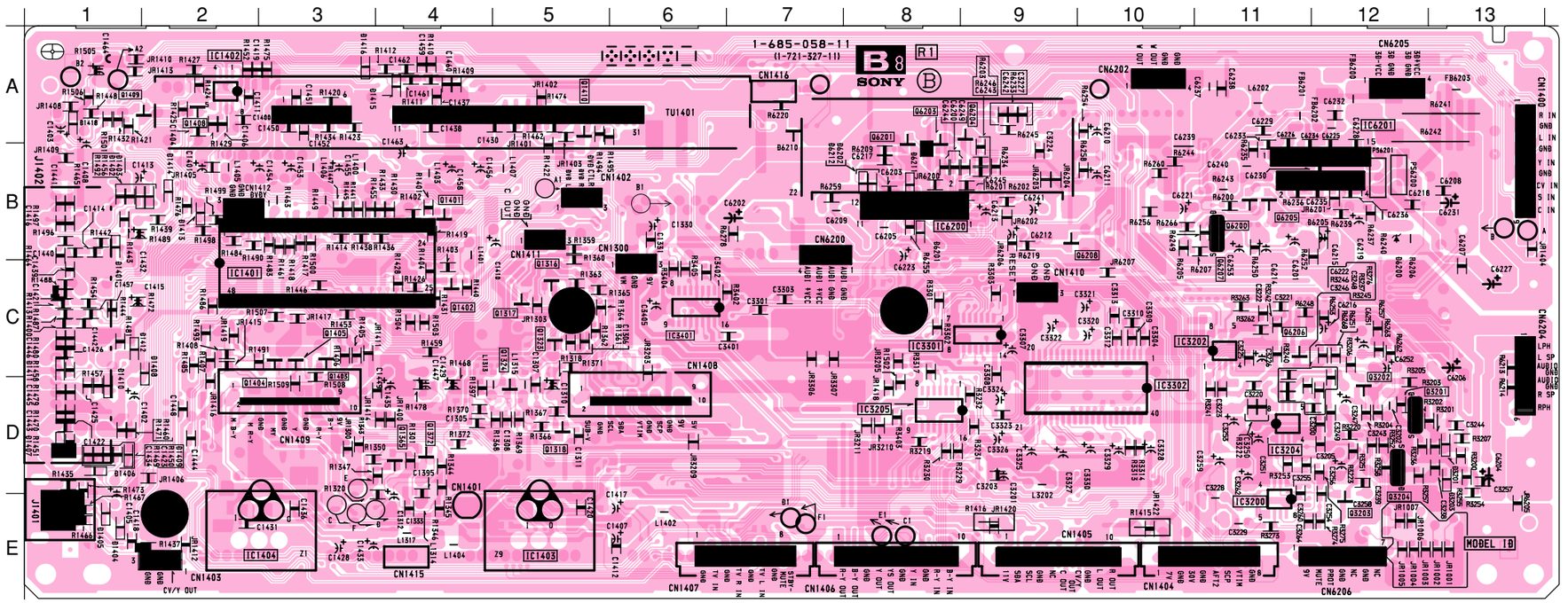
PRINTED WIRING BOARDS

B8 [AUDIO AMP, SURROUND PROCESSOR, AV IN/OUT, VM DRIVER]

– B8 Board – (Component Side) (KV-AR25M68)



– B8 Board – (Conductor Side) (KV-AR25M68)



B8 BOARD (Component Side)

IC					
IC1401	B-1				
IC1403	E-9				
IC1404	E-11				
IC6200	B-6				
IC6201	B-3				
TRANSISTOR					
Q3201	D-2				
Q3204	D-2				
Q6202	C-2				
Q6207	B-4				
Q6214	B-4				
DIODE					
D3301	D-5				
D3302	D-5				
D6200	C-2				

B8 BOARD (Conductor Side)

IC		TRANSISTOR		DIODE	
IC1401	C-2	Q1316	C-5	D1401	C-1
IC1402	A-2	Q1317	C-5	D1402	B-1
IC1403	E-5	Q1318	D-5	D1403	B-1
IC1404	E-3	Q1323	C-5	D1404	E-1
IC3200	E-11	Q1324	C-5	D1405	E-1
IC3202	C-10	Q1365	D-4	D1406	D-1
IC3204	D-11	Q1372	D-4	D1407	D-1
IC3205	D-8	Q1401	B-4	D1408	C-2
IC3301	C-8	Q1402	C-4	D1409	D-2
IC3302	D-10	Q1403	C-3	D1410	C-1
IC3401	C-6	Q1404	D-2	D1411	C-1
IC6200	B-8	Q1405	C-3	D1412	C-2
IC6201	A-12	Q1408	A-2	D1413	B-2
		Q1409	A-1	D1414	B-2
		Q1410	A-5	D1415	A-3
		Q3201	D-13	D1416	A-3
		Q3202	C-12	D1418	A-1
		Q3203	E-12	D3201	D-13
		Q3204	E-12	D3203	E-13
		Q6200	B-11	D6200	C-1
		Q6201	A-8	D6201	B-8
		Q6203	A-8	D6202	B-7
		Q6204	A-9	D6205	B-12
		Q6205	B-11	D6210	B-7
		Q6206	C-11	D6211	B-8
		Q6207	C-11	D6212	B-7
		Q6208	B-10		

- :Pattern from the side which enables seeing.
- :Pattern from the rear side.

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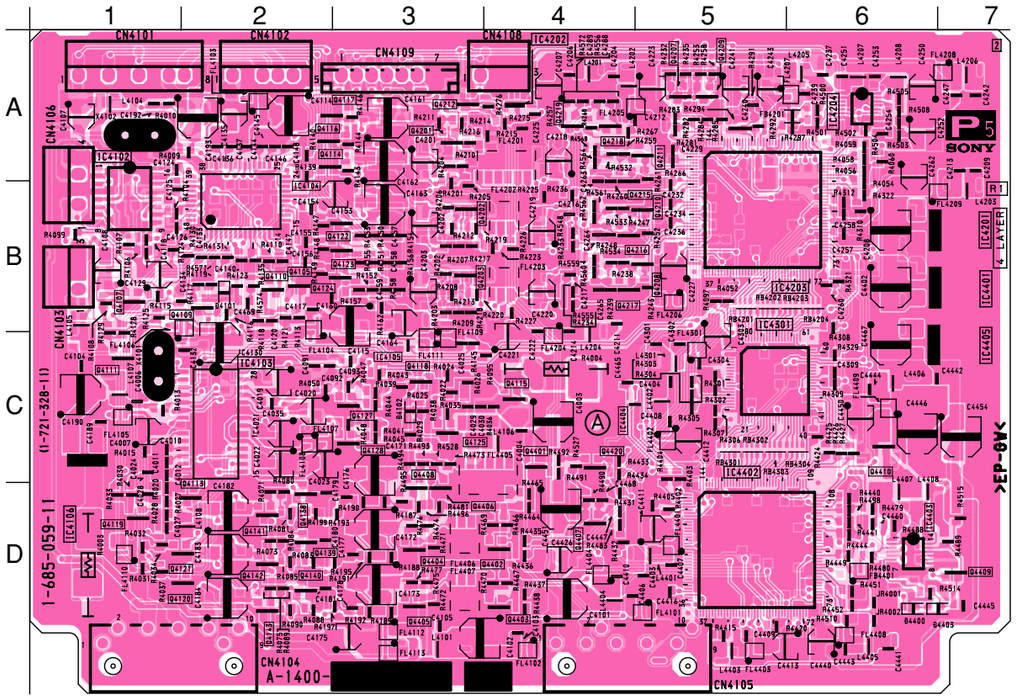
PRINTED WIRING BOARDS

P5 [PICTURE IN PICTURE, DVD SWITCH, DIGITAL TEXTURE ENHANCER]

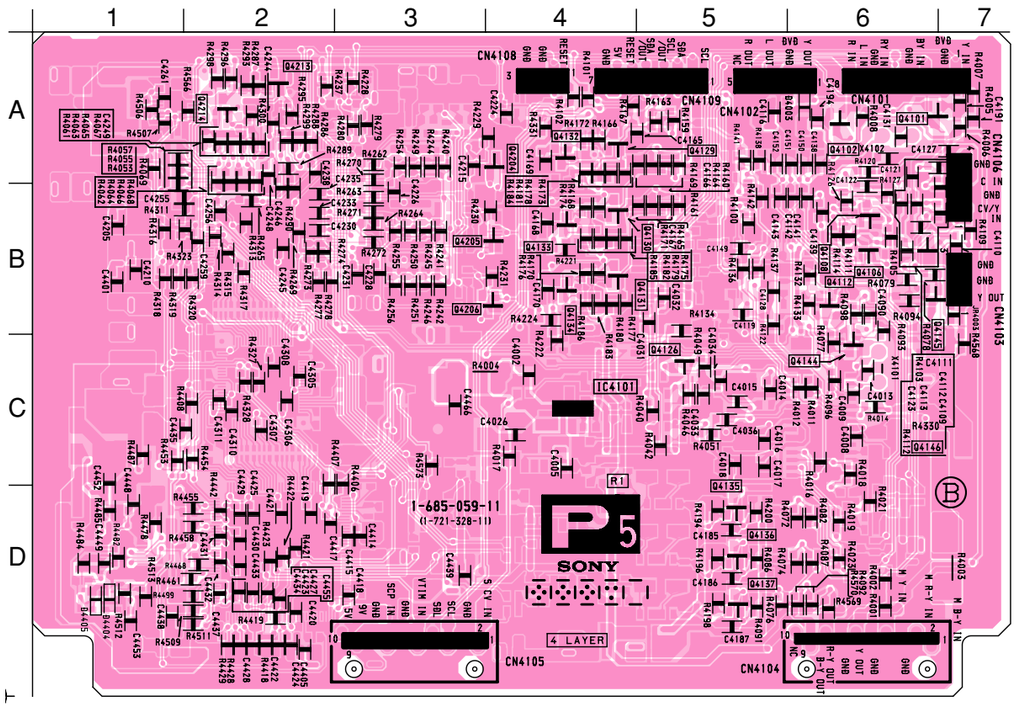
B1 [DVD SWITCH]

F [CISPR]

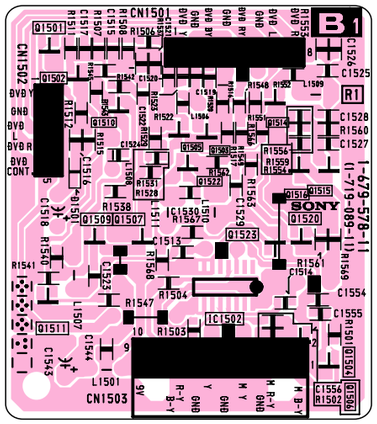
– P5 Board – (Component Side) (KV-AR25M68)



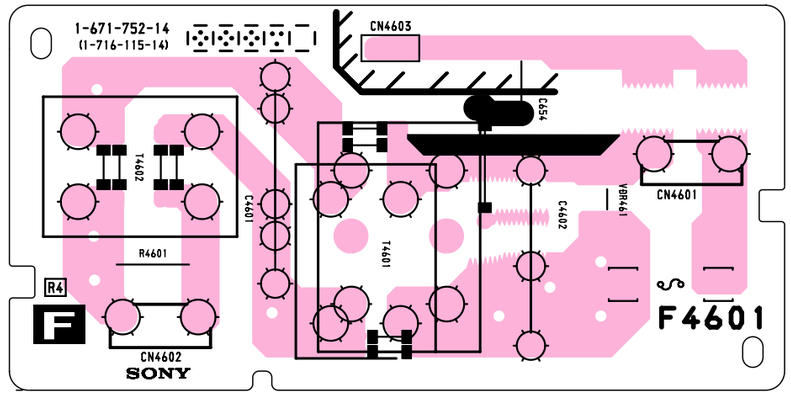
– P5 Board – (Conductor Side) (KV-AR25M68)



– B1 Board – (KV-AR25M31/AR25M90)



– F Board –



P5 BOARD (Component Side)

IC		Q4114 A-2	Q4210 B-5
IC4102 A-1		Q4115 C-4	Q4211 A-5
IC4103 C-2		Q4116 A-2	Q4212 A-3
IC4104 B-2		Q4117 A-3	Q4215 B-5
IC4105 C-3		Q4118 C-3	Q4216 B-5
IC4106 D-1		Q4119 D-1	Q4217 B-4
IC4201 B-7		Q4120 D-2	Q4218 A-4
IC4202 A-4		Q4121 D-2	Q4219 A-4
IC4203 B-5		Q4122 B-3	Q4401 C-4
IC4204 A-6		Q4123 B-3	Q4402 D-4
IC4301 B-5		Q4124 B-2	Q4403 D-4
IC4401 B-7		Q4125 C-3	Q4404 D-3
IC4402 C-5		Q4127 C-3	Q4405 D-3
IC4403 D-6		Q4128 C-3	Q4406 D-4
IC4404 C-4		Q4138 D-2	Q4407 D-4
IC4405 C-7		Q4139 D-2	Q4408 C-3
TRANSISTOR		Q4140 D-2	Q4409 D-7
Q4105 B-2		Q4141 D-2	Q4410 C-6
Q4107 B-1		Q4142 D-2	Q4420 C-4
Q4109 B-2		Q4143 E-2	**DIODE**
Q4110 B-2		Q4201 A-3	D4101 B-2
Q4111 C-1		Q4202 B-4	D4400 D-6
Q4113 D-2		Q4203 B-4	
		Q4207 A-5	
		Q4208 B-5	
		Q4209 A-5	

P5 BOARD (Conductor Side)

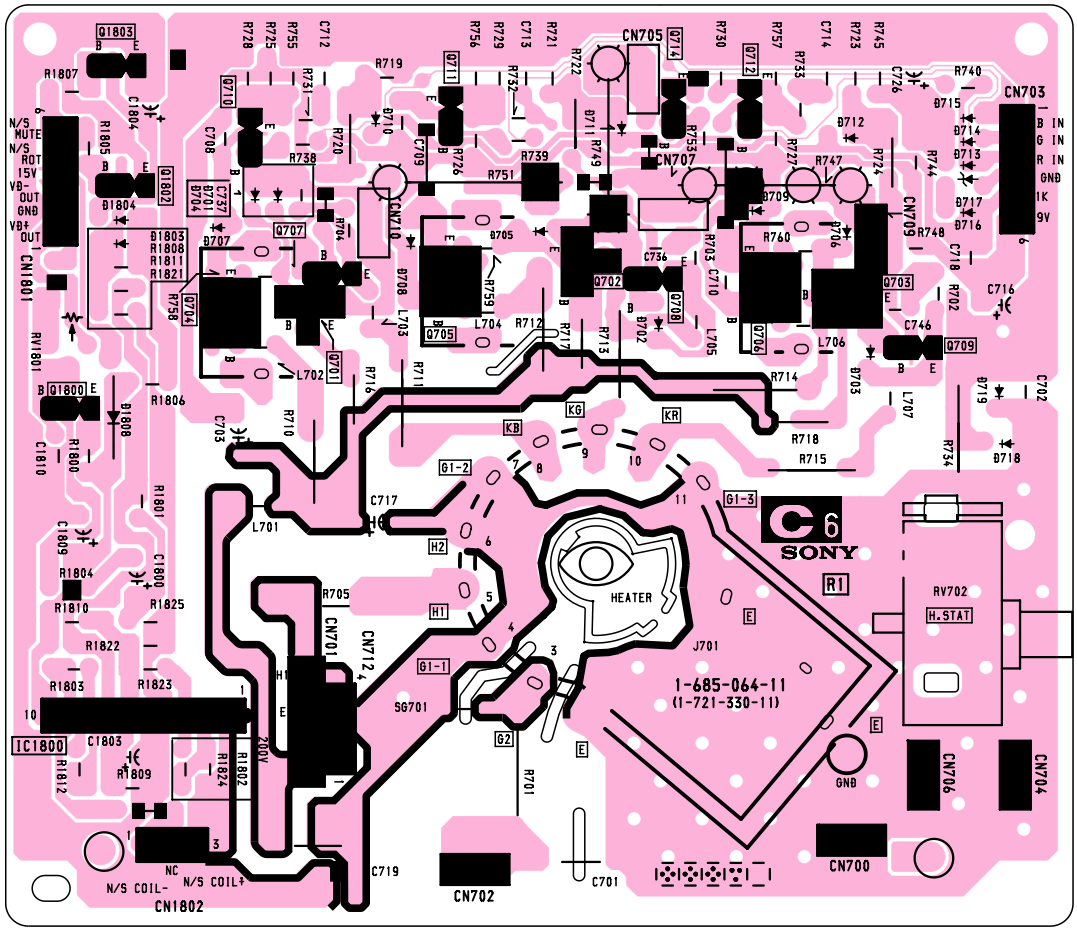
IC		Q4134 B-4
IC4101 C-4		Q4135 D-5
TRANSISTOR		Q4136 D-5
		Q4137 D-5
Q4101 A-6		Q4144 C-6
Q4102 A-6		Q4145 B-7
Q4106 B-6		Q4146 C-6
Q4108 B-6		Q4204 A-4
Q4112 B-6		Q4205 B-3
Q4126 C-5		Q4206 B-3
Q4129 A-5		Q4213 A-2
Q4130 B-5		**DIODE**
Q4131 B-5		D4003 A-5
Q4132 A-4		D4404 D-1
Q4133 B-4		D4405 D-1

- :Pattern from the side which enables seeing.
- :Pattern from the rear side.

PRINTED WIRING BOARDS

C6 [VIDEO AMP, ROTATION CIRCUIT]

– C6 Board – (FOR KV-AR25M31/AR25M90)

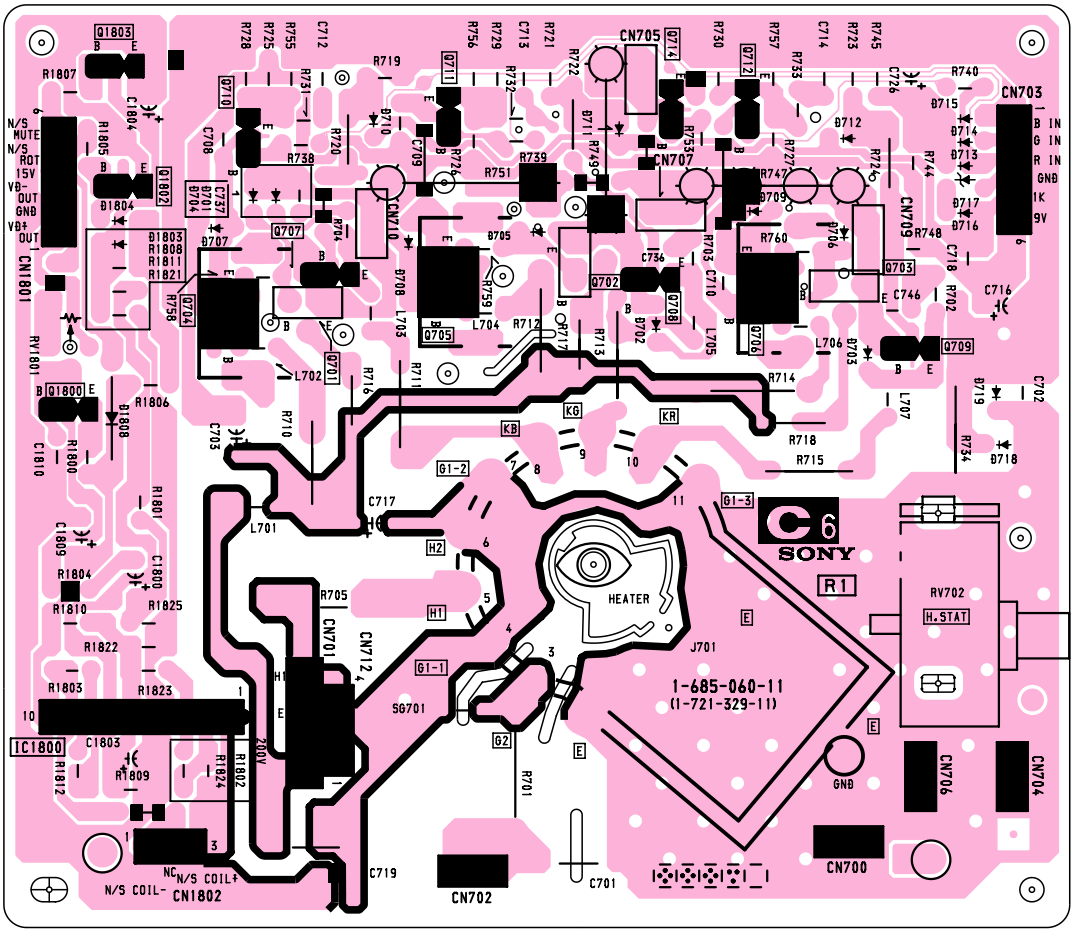


PRINTED WIRING BOARDS

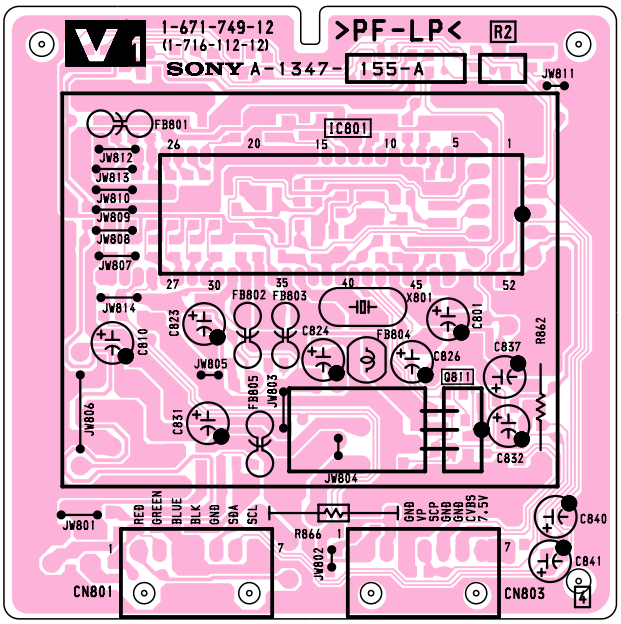
C6 [VIDEO AMP, ROTATION CIRCUIT]

V1 [TELETEXT]

– C6 Board – (FOR KV-AR25M68)



– V1 Board – (KV-AR25M31)

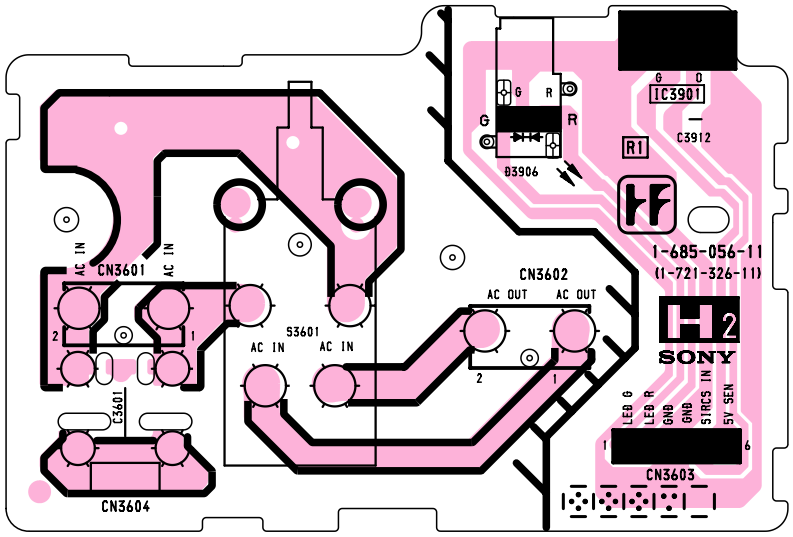


PRINTED WIRING BOARDS

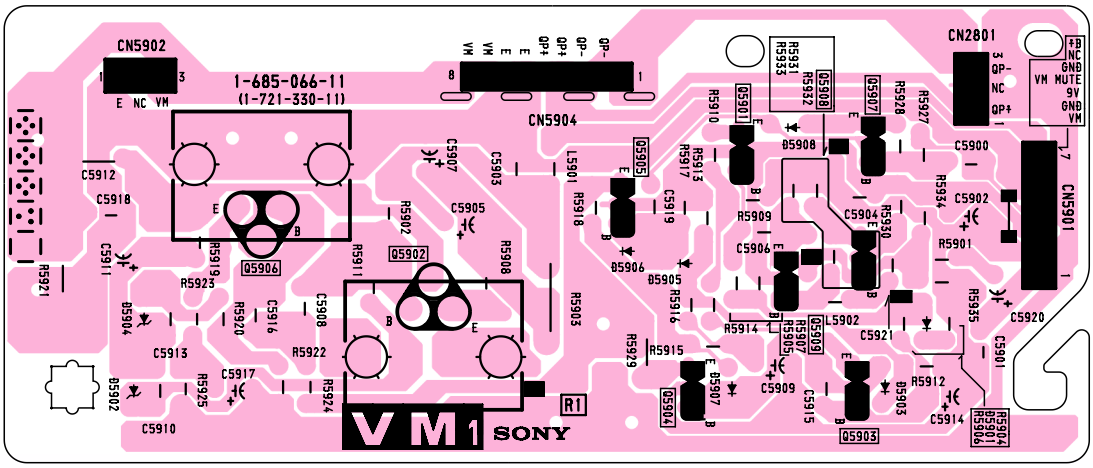
H2 [RECEIVER, POWER SW, LED]

VM1 [VELOCITY MODULATION]

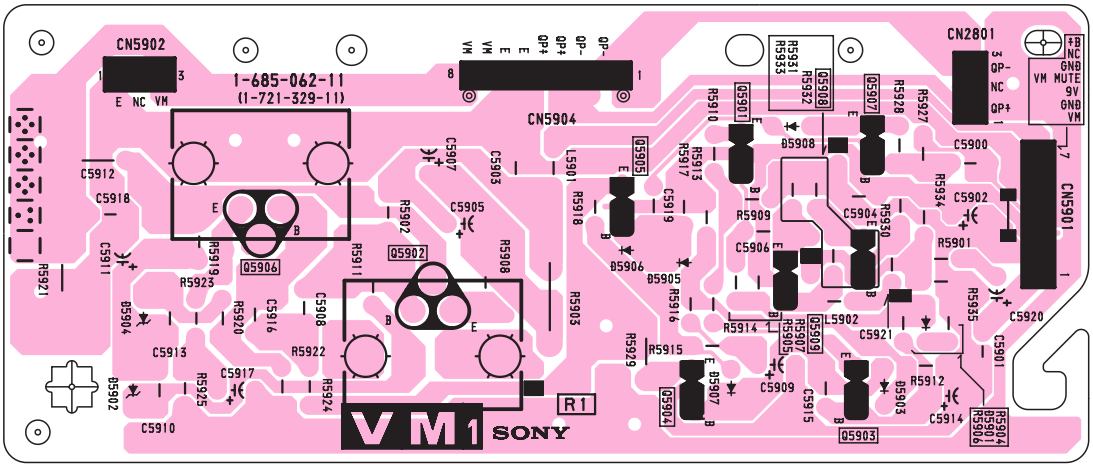
– H2 Board –



– VM1 Board – (FOR KV-AR25M31/AR25M90)

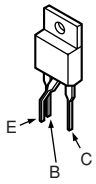
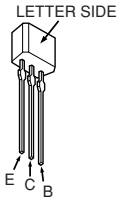
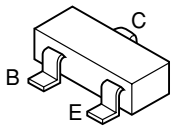
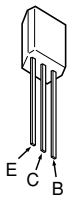
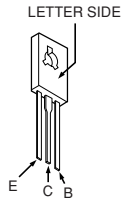


– VM1 Board – (FOR KV-AR25M68)



5-6. SEMICONDUCTORS

TRANSISTOR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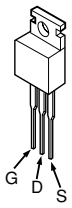
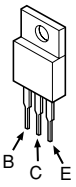
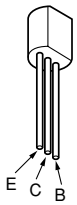
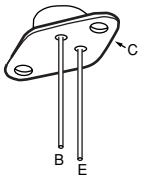
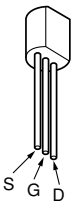
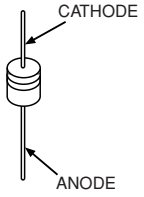
DIODE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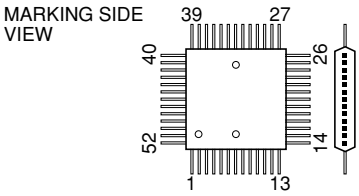
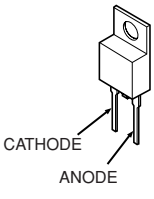
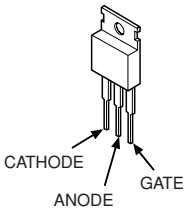
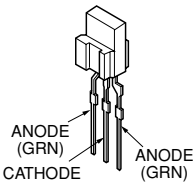
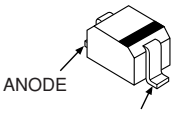
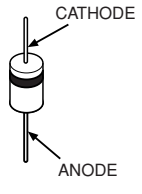
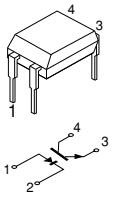
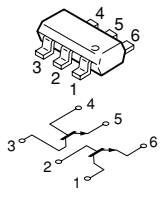
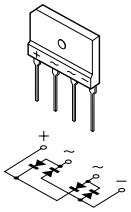
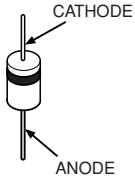
				
RU-1P		D5S6M	5P-6M	SPB-25MVWF	MA111-TX RD5.1SB-T2 RD7.5SB1-T1 RD9.1S-B RD10S-B UDZSTE-17.9-1B 1SS355TE-17 DTZ10B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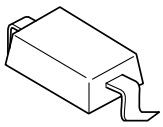
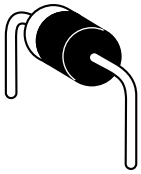
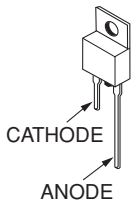
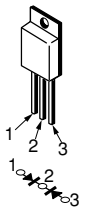
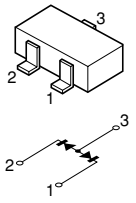
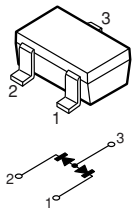
DIODE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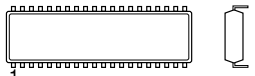
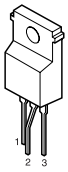
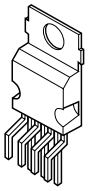
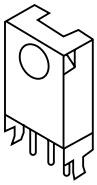
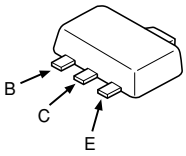
IC

 Dual In-line Package Pin 6~98					
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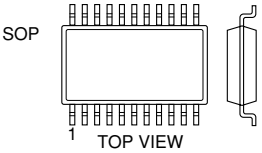
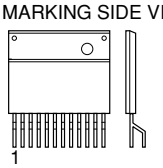
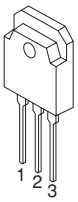
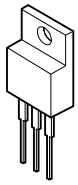
 Single In -line Package Pin 8~98		 Zig-zag In -line Package Pin 6~99			
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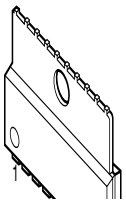
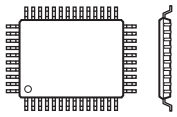
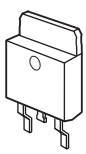
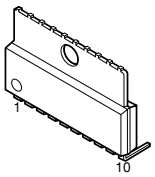
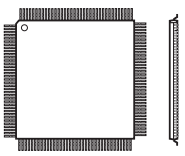
				
TA8200AH	CXA2163Q-T6	BA033FP-E2 BA18BCOFP-E2 LF50CDT-TR	LA6510	CXD96940 CXD96950 CXD96960

SECTION 6
EXPLODED VIEWS

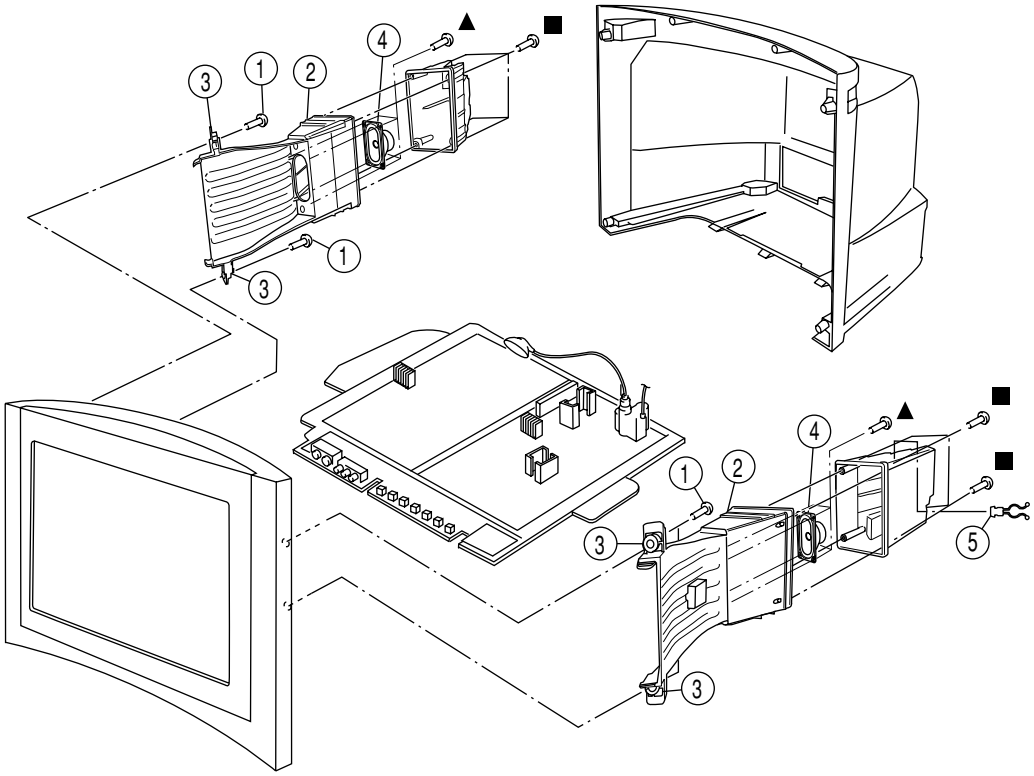
NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

6-1. SPEAKER BLOCK

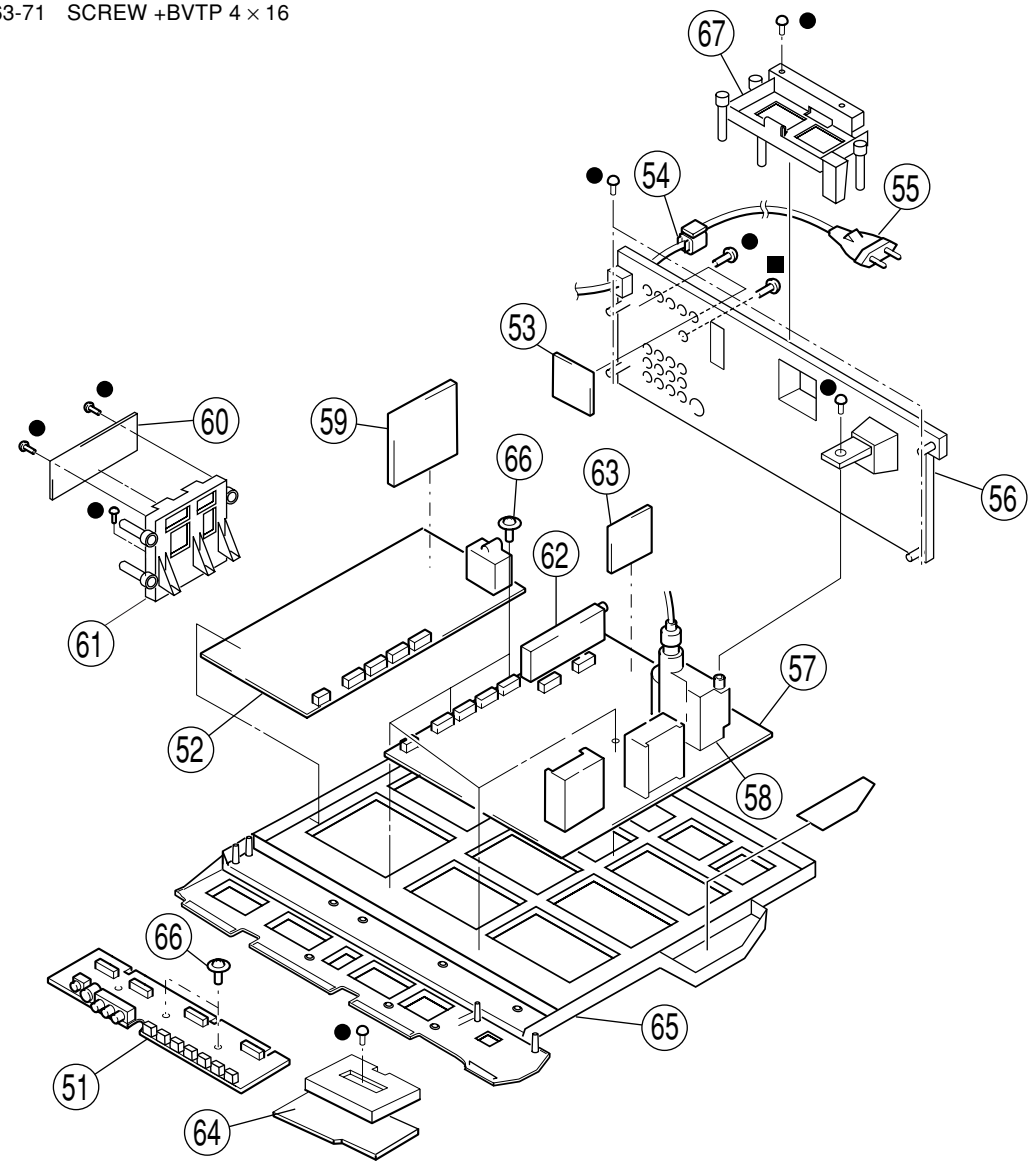
■ : 7-685-663-71 SCREW +BVTP 4 × 16
▲ : 7-685-661-14 SCREW +BVTP 4 × 12



REF. NO.		PART NO.	DESCRIPTION	REMARK
1		4-384-096-01	SCREW (4 x 16) TAPPING +P	
2	*	4-088-703-01	BAFFLE	
3		4-374-745-21	CUSHION A	
4		1-825-220-11	SPEAKER (15 x 6.5 CM) (KV-AR25M31/AR25M90)	
		1-825-099-11	SPEAKER (13 x 5.5 CM) (KV-AR25M68)	
5	*	4-082-205-01	LOCK, PURSE	

6-2. CHASSIS

●: 7-685-648-79 SCREW +BVTP 3 × 12
■: 7-685-663-71 SCREW +BVTP 4 × 16

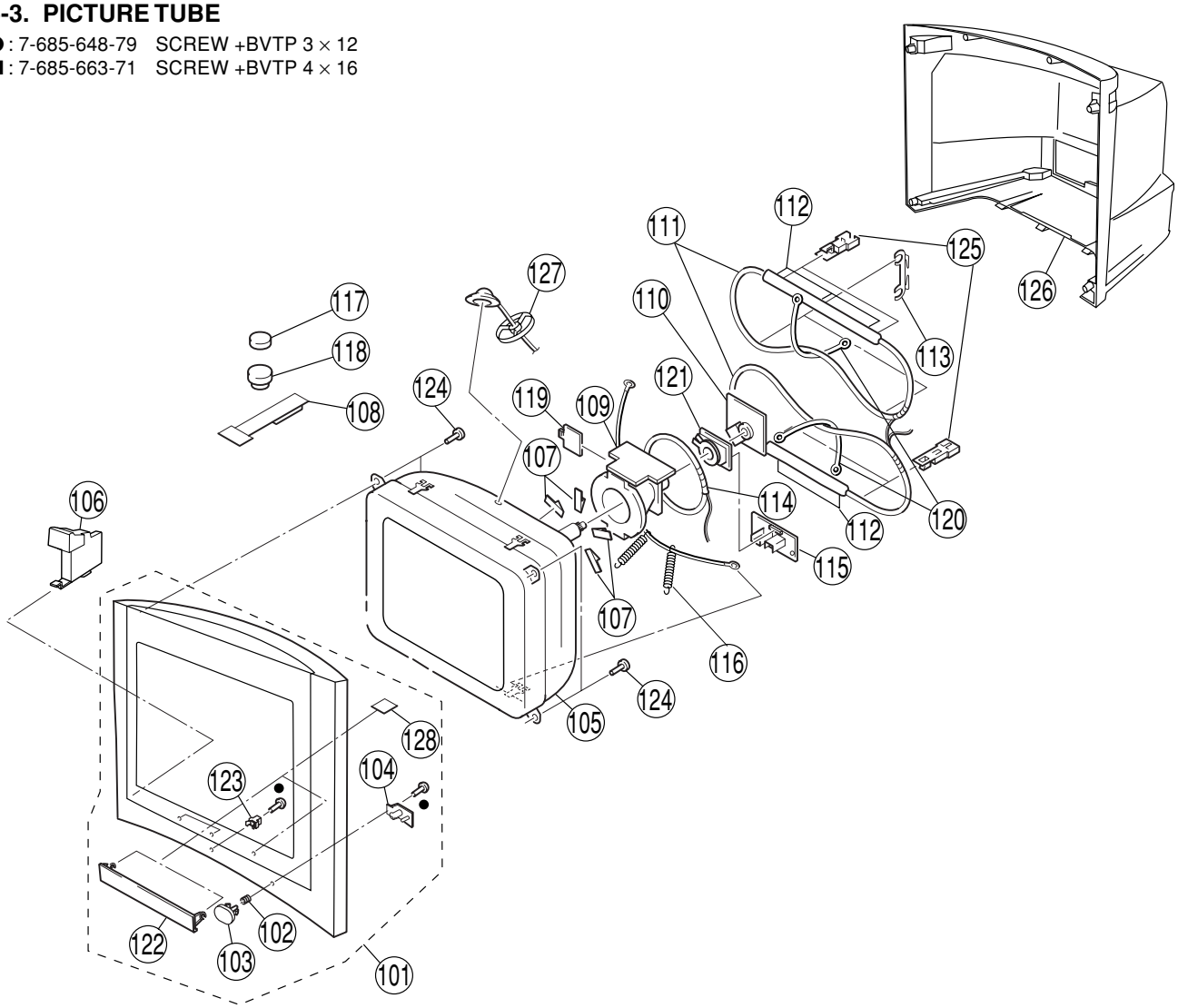


REF. NO.	PART NO.	DESCRIPTION	REMARK
51	* A-1401-972-A	H1 BOARD, MOUNTED (KV-AR25M31/AR25M90)	
	* A-1401-322-A	H1 BOARD, MOUNTED (KV-AR25M68)	
52	* A-1300-516-A	B10 BOARD, COMPLETE (KV-AR25M31/AR25M90)	
	* A-1300-783-A	B8 BOARD, COMPLETE (KV-AR25M68)	
53	* A-1400-975-A	J BOARD, MOUNTED (KV-AR25M31/AR25M90)	
	* A-1401-328-A	J BOARD, MOUNTED (KV-AR25M68)	
54	⚠ 4-022-115-12	HOLDER, AC CORD (KV-AR25M31/AR25M90)	
	⚠ 4-022-115-31	HOLDER, AC CORD (KV-AR25M68)	
55	⚠ 1-823-481-11	CORD, AC POWER (WITH CONNECTOR) (KV-AR25M31)	
	⚠ 1-823-482-11	CORD AC POWER (WITH CONNECTOR) (KV-AR25M90)	
	⚠ 1-575-023-41	CORD AC POWER (WITH CONNECTOR) (KV-AR25M68)	
56	* 4-081-023-03	BRACKET, TERMINAL	
57	* A-1300-785-A	A BOARD COMPLETE (KV-AR25M31)	
	* A-1300-782-A	A BOARD COMPLETE (KV-AR25M68)	
	* A-1300-685-A	A BOARD COMPLETE (KV-AR25M90)	

REF. NO.	PART NO.	DESCRIPTION	REMARK
58	⚠ 1-453-284-11	TRANSFORMER ASSY, FLYBACK (NX-4009//M314) (KV-AR25M68/AR25M90)	
	⚠ 1-453-284-21	TRANSFORMER ASSY, FLYBACK (NX-4009//M314) (KV-AR25M31)	
59	* A-1131-652-A	B1 BOARD MOUNTED (KV-AR25M31/AR25M90)	
	* A-1401-487-A	P5 BOARD MOUNTED (KV-AR25M68)	
60	* A-1401-812-A	F BOARD MOUNTED (KV-AR25M31/AR25M90)	
	* A-1401-345-A	F BOARD MOUNTED (KV-AR25M68)	
61	* 4-066-682-01	BRACKET F PWB	
62	⚠ 8-598-451-30	TUNER, FSS BTF-WG441 (KV-AR25M90)	
	⚠ 8-598-451-60	TUNER, FSS BTF-WG441 (KV-AR25M31)	
	⚠ 8-598-451-20	TUNER, FSS BTF-WG441 (KV-AR25M68)	
63	* A-1347-164-A	V1 BOARD COMPLETE (KV-AR25M31)	
64	* A-1400-973-A	H2 BOARD MOUNTED (KV-AR25M31/AR25M90)	
	* A-1401-323-A	H2 BOARD MOUNTED (KV-AR25M68)	
65	4-088-700-01	BRACKET MAIN	
66	4-046-797-01	SCREWS (3 x 12), (+) BVTAP (KV-AR25M31/AR25M90)	
	4-046-797-21	SCREWS (3 x 12), (+) BVTAP (KV-AR25M68)	
67	* 4-070-963-01	HOLDER PWB (KV-AR25M31)	

6-3. PICTURE TUBE

● : 7-685-648-79 SCREW +BVTP 3 × 12
■ : 7-685-663-71 SCREW +BVTP 4 × 16



REF. NO.		PART NO.	DESCRIPTION	REMARK
101		X-4040-268-1	BEZNET ASSY (KV-AR25M31/AR25M90)	102-104, 122,123,128
		X-4040-781-1	BEZNET ASSY (KV-AR25M68)	
102		4-036-405-21	SPRING, COMPRESSION	
103		4-086-448-01	BUTTON, POWER	
104	*	4-086-707-01	GUIDE, LIGHT	
105	⚠	8-733-250-05	PICTURE TUBE (M68LNH070X) (KV-AR25M90)	
	⚠	8-733-250-05	PICTURE TUBE (A60LPN70X) (KV-AR25M31/AR25M68)	
106		4-085-483-01	SUPPORT, CRT	
107		4-046-600-11	SPACER, DY (KV-AR25M31/AR25M90)	
		4-064-818-01	SPACER, DY (KV-AR25M68)	
108		X-4387-214-3	PERMALOY ASSY, CORRECTION (KV-AR25M31/AR25M90)	
		4-051-734-42	PIECE B (120) CONV, CORRECT (KV-AR25M68)	
109	⚠	1-451-475-11	DEFLECTION YOKE (Y25RSA)	
110	*	A-1400-971-A	C6 BOARD, MOUNTED (KV-AR25M31/AR25M90)	
	*	A-1401-614-A	C6 BOARD, MOUNTED (KV-AR25M68)	
111	⚠	1-419-322-11	COIL, DEGAUSSING	
112	*	4-063-935-21	CUSHION (50 x 550), DGC	
113		4-064-883-03	HOLDER, DGC	
114		1-452-896-61	COIL, NA ROTATION (RT200) (KV-AR25M31/AR25M90)	
		1-452-896-81	COIL, NA ROTATION (KV-AR25M68)	

REF. NO.		PART NO.	DESCRIPTION	REMARK
115	*	A-1400-974-A	VM1 BOARD, MOUNTED (KV-AR25M31/AR25M90)	
	*	A-1401-327-A	VM1 BOARD, MOUNTED (KV-AR25M68)	
116		4-369-318-61	SPRING, TENSION (KV-AR25M31/AR25M90)	
		4-369-318-41	SPRING, TENSION (KV-AR25M68)	
117		1-452-032-00	MAGNET, DISC	
118		1-452-094-00	CIRCULAR DISC MAGNET B	
119		4-057-714-01	PIECE, TLH CONVERGENCE	
120		4-079-376-01	BAND, DGC	
121		8-453-011-61	NA299-C3 (KV-AR25M31/AR25M90)	
		8-453-011-21	NA299-S (KV-AR25M68)	
122		4-088-697-01	DOOR	
123		4-087-491-21	SPRING (DOOR)	
124		4-046-765-12	SCREW, TAPPING 7+ CROWN WASHER	
125	*	4-065-572-01	CLIP (25RSN), DGC	
126		X-4040-830-1	REAR COVER ASSY (■ 9 SCREWS)	
127		3-704-372-11	HOLDER HV CABLE (KV-AR25M31)	
128		4-068-502-51	CUSHION DOOR	

SECTION 7
ELECTRICAL PARTS LIST

A

NOTE:

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- All resistors are in ohms
- F : nonflammable

CAPACITORS
- MF : μF, PF : μμF

COILS
- MMH : mH, UH : μH

REF NO.	PART NO.	DESCRIPTION			
	* A-1300-785-A	A BOARD COMPLETE (KV-AR25M31)			
	* A-1300-782-A	A BOARD COMPLETE (KV-AR25M68)			
	* A-1300-685-A	A BOARD COMPLETE (KV-AR25M90)			
		**********			
	* 4-040-983-22	TERMINAL BOARD (D) (KV-AR25M68)			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
	4-382-854-21	SCREW (M3X14), P, SW (+)			
		<CAPACITOR>			
C004	1-162-960-11	CERAMIC CHIP	220PF	10.00%	50V
C005	1-162-960-11	CERAMIC CHIP	220PF	10.00%	50V
C006	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C007	1-126-947-11	ELECT	47UF	20.00%	16V
C013	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C014	1-126-947-11	ELECT	47UF	20.00%	25V
C015	1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C016	1-163-243-11	CERAMIC CHIP	47PF	5.00%	50V
C017	1-162-925-11	CERAMIC CHIP	68PF	5.00%	50V
C018	1-163-243-11	CERAMIC CHIP	47PF	5.00%	50V
C019	1-126-947-11	ELECT	47UF	20.00%	25V
C020	1-163-259-91	CERAMIC CHIP	220PF	5.00%	50V
C022	1-162-915-11	CERAMIC CHIP	10PF	0.50PF	50V
C023	1-162-915-11	CERAMIC CHIP	10PF	0.50PF	50V
C024	1-162-915-11	CERAMIC CHIP	10PF	0.50PF	50V
C026	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C027	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C028	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C030	1-126-965-91	ELECT	22UF	20.00%	50V
C031	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C032	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C034	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C041	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C042	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C043	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C044	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C047	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C048	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C050	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C051	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C053	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V
C056	1-163-263-11	CERAMIC CHIP	330PF	5.00%	50V
C061	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C103	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C104	1-126-935-11	ELECT	470UF	20.00%	16V
C107	1-162-962-11	CERAMIC CHIP	470PF	10.00%	50V
C108	1-126-947-11	ELECT	47UF	20.00%	16V
C109	1-162-962-11	CERAMIC CHIP	470PF	10.00%	50V
C110	1-162-962-11	CERAMIC CHIP	470PF	10.00%	50V
C111	1-162-962-11	CERAMIC CHIP	470PF	10.00%	50V

REF NO.	PART NO.	DESCRIPTION			
C112	1-126-947-11	ELECT	47UF	20.00%	16V
C113	1-126-935-11	ELECT	470UF	20.00%	16V
C114	1-126-967-11	ELECT	47UF	20.00%	50V
C118	1-110-501-11	CERAMIC CHIP	0.33UF	10.00%	16V
C300	1-164-505-11	CERAMIC CHIP (KV-AR25M31/AR25M90)	2.2UF		16V
C301	1-126-935-11	ELECT	470UF	20.00%	16V
C302	1-162-962-11	CERAMIC CHIP	470PF	10.00%	50V
C303	1-126-959-11	ELECT	0.47UF	20.00%	50V
C304	1-126-967-11	ELECT	47UF	20.00%	50V
C305	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C306	1-163-233-91	CERAMIC CHIP	18PF	5.00%	50V
C307	1-163-233-91	CERAMIC CHIP	18PF	5.00%	50V
C308	1-163-259-91	CERAMIC CHIP	220PF	5.00%	50V
C309	1-137-378-11	MYLAR	0.22UF	5.00%	50V
C311	1-126-964-11	ELECT	10UF	20.00%	50V
C312	1-164-346-11	CERAMIC CHIP	1UF		16V
C313	1-164-346-11	CERAMIC CHIP	1UF		16V
C314	1-164-346-11	CERAMIC CHIP	1UF		16V
C315	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C316	1-126-934-11	ELECT	220UF	20.00%	16V
C317	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C318	1-162-974-11	CERAMIC CHIP	0.01UF		50V
C319	1-162-974-11	CERAMIC CHIP	0.01UF		50V
C320	1-162-974-11	CERAMIC CHIP	0.01UF		50V
C321	1-164-489-11	CERAMIC CHIP	0.22UF	10.00%	16V
C322	1-162-962-11	CERAMIC CHIP	470PF	10.00%	50V
C324	1-162-968-11	CERAMIC CHIP	0.0047UF	10.00%	50V
C325	1-126-960-11	ELECT	1UF	20.00%	50V
C327	1-126-965-91	ELECT	22UF	20.00%	50V
C328	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C329	1-126-963-11	ELECT (KV-AR25M31/AR25M90)	4.7UF	20.00%	50V
C330	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C331	1-126-963-11	ELECT	4.7UF	20.00%	50V
C332	1-126-963-11	ELECT	4.7UF	20.00%	50V
C335	1-164-004-11	CERAMIC CHIP (KV-AR25M31/AR25M90)	0.1UF	10.00%	25V
C336	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C337	1-126-961-11	ELECT	2.2UF	20.00%	50V
C341	1-115-340-11	CERAMIC CHIP	0.22UF	10.00%	25V
C342	1-163-259-91	CERAMIC CHIP	220PF	5.00%	50V
C347	1-126-933-11	ELECT (KV-AR25M31/AR25M90)	100UF	20.00%	16V
C348	1-164-004-11	CERAMIC CHIP (KV-AR25M31/AR25M90)	0.1UF	10.00%	25V
C349	1-164-004-11	CERAMIC CHIP (KV-AR25M31/AR25M90)	0.1UF	10.00%	25V
C350	1-163-031-91	CERAMIC CHIP (KV-AR25M31/AR25M90)	0.01UF		50V
C351	1-126-964-11	ELECT (KV-AR25M31/AR25M90)	10UF	20.00%	50V
C352	1-164-004-11	CERAMIC CHIP (KV-AR25M31/AR25M90)	0.1UF	10.00%	25V

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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REF NO.		PART NO.	DESCRIPTION		REMARK	
C353		1-126-960-11	ELECT	1UF	20.00%	50V
C356		1-126-947-11	ELECT	47UF	20.00%	16V
C357		1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C358		1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C359		1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C502		1-163-009-91	CERAMIC CHIP	0.001UF	10.00%	50V
C506		1-107-638-11	ELECT	33UF	20.00%	160V
C507		1-161-830-00	CERAMIC	0.0047UF		500V
C510		1-102-112-00	CERAMIC	330PF	10.00%	50V
C512		1-163-989-11	CERAMIC CHIP	0.033UF	10.00%	25V
C513		1-163-263-11	CERAMIC CHIP	330PF	5.00%	50V
C514		1-106-383-00	MYLAR	0.047UF	10.00%	200V
C517		1-162-967-11	CERAMIC CHIP	0.0033UF	10.00%	50V
C518		1-104-665-11	ELECT	100UF	20.00%	10V
C519		1-102-212-00	CERAMIC	820PF	10.00%	500V
C521		1-126-934-11	ELECT	220UF	20.00%	16V
C522		1-126-933-11	ELECT	100UF	20.00%	16V
C523		1-102-002-00	CERAMIC	680PF	10.00%	500V
C524		1-126-967-11	ELECT	47UF	20.00%	50V
C526		1-130-495-00	MYLAR	0.1UF	5.00%	50V
C527		1-102-820-00	CERAMIC	330PF	5.00%	50V
C528		1-161-754-00	CERAMIC	0.001UF	10.00%	2KV
C530		1-137-372-11	MYLAR	0.022UF	5.00%	50V
C531		1-107-903-11	ELECT	2.2UF	20.00%	50V
C532		1-126-941-11	ELECT	470UF	20.00%	25V
C533		1-126-941-11	ELECT	470UF	20.00%	25V
C534		1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C536		1-130-495-00	MYLAR	0.1UF	5.00%	50V
C537		1-126-969-11	ELECT	220UF	20.00%	50V
C538		1-127-717-11	FILM	19000PF	3%	1.2KV
C539	⚠	1-130-118-91	FILM	0.051UF	5.00%	400V
			(KV-AR25M31/AR25M90)			
C539	⚠	1-130-118-61	FILM	0.051UF	5.00%	400V
			(KV- AR25M68)			
C540		1-136-171-00	FILM	0.33UF	5.00%	50V
C546		1-165-319-11	CERAMIC CHIP	0.1UF		50V
C549		1-162-968-11	CERAMIC CHIP	0.0047UF	10.00%	50V
C550		1-106-220-00	MYLAR	0.1UF	10.00%	100V
C551		1-126-960-11	ELECT	1UF	20.00%	50V
C552		1-162-116-00	CERAMIC	680PF	10.00%	2KV
C553		1-162-116-00	CERAMIC	680PF	10.00%	2KV
C554		1-107-364-11	MYLAR	0.01UF	10.00%	200V
C556		1-126-941-11	ELECT	470UF	20.00%	25V
C557		1-126-941-11	ELECT	470UF	20.00%	25V
C558		1-123-024-21	ELECT	33UF		160V
C560		1-102-228-00	CERAMIC	470PF	10.00%	500V
C561		1-129-708-91	FILM	0.0033UF	5.00%	630V
C562		1-102-228-00	CERAMIC	470PF	10.00%	500V
C564		1-163-038-91	CERAMIC CHIP	0.1UF		25V
C565		1-107-655-11	ELECT	47UF	20.00%	250V
C566		1-102-244-00	CERAMIC	220PF	10.00%	500V
C567	⚠	1-115-520-11	FILM	0.68UF	5.00%	250V
			(KV-AR25M31/AR25M90)			
C567	⚠	1-115-520-21	FILM	0.68UF	5.00%	250V
			(KV-AR25M68)			
C568		1-102-228-00	CERAMIC	470PF	10.00%	500V
C570		1-115-521-11	FILM	0.82UF	5.00%	250V
C572		1-107-846-11	FILM	0.1UF	5.00%	250V
C573		1-106-379-12	MYLAR	0.033UF	10.00%	200V
C574		1-104-709-11	ELECT	4.7UF		160V
C576		1-130-495-00	MYLAR	0.1UF	5.00%	50V

REF NO.		PART NO.	DESCRIPTION		REMARK	
C577		1-106-395-00	MYLAR	0.15UF	10.00%	200V
C582		1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C586		1-216-295-91	SHORT CHIP	0		
C600	⚠	1-115-165-11	MYLAR	0.1UF	20.00%	250V
C602	⚠	1-115-165-11	MYLAR	0.1UF	20.00%	250V
C603		1-126-947-11	ELECT	47UF	20.00%	25V
C604		1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C605	⚠	1-119-892-51	CERAMIC	470PF	10.00%	250V
C606	⚠	1-119-892-51	CERAMIC	470PF	10.00%	250V
C607		1-161-830-00	CERAMIC	0.0047UF	99%	500V
C608		1-161-830-00	CERAMIC	0.0047UF	99%	500V
C609		1-126-968-11	ELECT	100UF	20.00%	50V
C610		1-126-964-11	ELECT	10UF	20.00%	50V
C611		1-161-830-00	CERAMIC	0.0047UF	99%	500V
C612		1-161-830-00	CERAMIC	0.0047UF	99%	500V
C613		1-125-906-11	ELECT	560UF	20.00%	450V
C614		1-126-964-11	ELECT	10UF	20.00%	50V
C615	⚠	1-119-892-51	CERAMIC	470PF	10.00%	250V
C616		1-130-202-00	FILM	0.022UF	5.00%	400V
C617		1-107-792-11	CERAMIC	100PF	5.00%	1KV
C618		1-125-893-11	FILM	680PF	3.00%	1.5KV
C619	⚠	1-119-892-51	CERAMIC	470PF	10.00%	250V
C620		1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C621		1-102-114-00	CERAMIC	470PF	10.00%	50V
C622		1-102-074-00	CERAMIC	0.001UF	10.00%	50V
C623		1-104-665-11	ELECT	100UF	20.00%	25V
C624		1-104-331-11	CERAMIC	0.0022UF	10.00%	1KV
C626		1-102-002-00	CERAMIC	680PF	10.00%	500V
C629		1-107-906-11	ELECT	10UF	20.00%	50V
C630		1-125-494-11	ELECT(BLOCK)	560UF	20.00%	160V
C631		1-128-550-11	ELECT	2200UF	20.00%	50V
C632		1-126-936-11	ELECT	3300UF	20.00%	16V
C633		1-104-999-11	MYLAR	0.1UF	10.00%	200V
C634		1-126-933-11	ELECT	100UF	20.00%	16V
C635		1-126-934-11	ELECT	220UF	20.00%	16V
C636		1-104-760-11	CERAMIC CHIP	0.047UF	10.00%	50V
C638		1-161-830-00	CERAMIC	0.0047UF		500V
			(KV-AR25M68)			
C641		1-102-002-00	CERAMIC	680PF	10.00%	500V
C642		1-126-943-11	ELECT	2200UF	20.00%	25V
C643		1-104-665-11	ELECT	100UF	20.00%	10V
C644		1-104-331-11	CERAMIC	0.0022UF	10.00%	1KV
C645		1-137-605-11	MYLAR	0.01UF	10.00%	250V
C646		1-107-679-91	ELECT	10UF	20.00%	450V
C647		1-163-275-11	CERAMIC CHIP	0.001UF	5.00%	50V
C649		1-126-940-11	ELECT	330UF	20.00%	25V
C650		1-163-275-11	CERAMIC CHIP	0.001UF	5.00%	50V
C651		1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C652		1-126-965-91	ELECT	22UF	20.00%	50V
C653		1-126-947-11	ELECT	47UF	20.00%	25V
C655	⚠	1-119-892-51	CERAMIC	470PF	10.00%	250V
C657		1-101-821-00	CERAMIC	0.0022UF		500V
C659		1-162-116-00	CERAMIC	680PF	10.00%	2KV
C912		1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C913		1-104-665-11	ELECT	100UF	20.00%	10V

<CONNECTOR>

CN101	*	1-779-890-11	CONNECTOR, BOARD TO BOARD 10P
CN102	*	1-779-889-11	CONNECTOR, BOARD TO BOARD 8P
CN104		1-695-915-11	TAB (CONTACT)

A

REF NO.		PART NO.	DESCRIPTION	REMARK
CN105		1-695-915-11	TAB (CONTACT)	
CN106	*	1-564-506-11	PLUG, CONNECTOR 3P	
CN201	*	1-564-508-11	PLUG, CONNECTOR 5P	
CN202	*	1-785-608-11	PIN, CONNECTOR 4P	
CN301	*	1-774-813-11	CONNECTOR, BOARD TO BOARD 7P (KV-AR25M31)	
CN302	*	1-779-889-11	CONNECTOR, BOARD TO BOARD 8P (KV-AR25M68)	
CN303	*	1-779-890-11	CONNECTOR, BOARD TO BOARD 10P	
CN305	*	1-564-509-11	PLUG, CONNECTOR 6P	
CN307	*	1-774-813-11	CONNECTOR, BOARD TO BOARD 7P (KV-AR25M31)	
CN501	*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P	
CN502	*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P	
CN505	*	1-564-508-11	PLUG, CONNECTOR 5P	
CN507	*	1-564-509-11	PLUG, CONNECTOR 6P	
CN601	*	1-580-843-11	PIN, CONNECTOR (POWER)	
CN602	*	1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	
CN604	*	1-573-963-11	PIN, CONNECTOR (PC BOARD) 3P	
CN608		1-564-507-41	PLUG, CONNECTOR 4P	
CN904	*	1-564-512-11	PLUG, CONNECTOR 9P	
			<DIODE>	
D001		8-719-081-97	MMDL914T1	
D002		8-719-081-97	MMDL914T1	
D004		1-216-295-91	SHORT CHIP 0	
D005		8-719-081-97	MMDL914T1	
D006		8-719-081-97	MMDL914T1	
D007		8-719-081-97	MMDL914T1	
D008		8-719-081-97	MMDL914T1	
D009		8-719-081-97	MMDL914T1	
D010		8-719-158-35	RD9.1S-B	
D100		8-719-404-50	MA111-TX (KV-AR25M31/AR25M90)	
D100		8-719-081-97	MMDL914T1 (KV-AR25M68)	
D300		1-216-295-91	SHORT CHIP 0	
D301		8-719-081-97	MMDL914T1	
D306		8-719-081-97	MMDL914T1	
D307		8-719-081-97	MMDL914T1	
D308		8-719-081-97	MMDL914T1	
D309		8-719-159-10	RD5.1SB-T2 (KV-AR25M31/AR25M90)	
D309		8-719-069-54	UDZSTE-175.1B (KV-AR25M68)	
D311		8-719-081-97	MMDL914T1	
D312		8-719-081-97	MMDL914T1	
D313		8-719-081-97	MMDL914T1	
D315		8-719-081-97	MMDL914T1	
D316		8-719-037-06	RD7.5SB1-T1	
D319		8-719-158-35	RD9.1S-B	
D320		8-719-158-35	RD9.1S-B	
D321		8-719-158-35	RD9.1S-B	
D322		8-719-158-35	RD9.1S-B	
D504		8-719-302-43	EL1Z (KV-AR25M31/AR25M90)	
D504		8-719-075-05	DIODE FR104-A5 (KV-AR25M68)	
D505		8-719-081-97	MMDL914T1	
D506		8-719-911-19	1SS119-25	
D507		8-719-081-97	MMDL914T1	
D508		8-719-081-97	MMDL914T1	
D509		1-216-073-91	RES-CHIP 10K 5% 1/10W	
D510		8-719-081-97	MMDL914T1	
D511		8-719-081-97	MMDL914T1	
D512		8-719-081-97	MMDL914T1	
D513		8-719-908-03	GP08D	
D517		8-719-945-80	ERC06-15S	
D518		8-719-074-35	RU4AM-T4	
D519		8-719-945-80	ERC06-15S	
D521		8-719-302-43	EL1Z (KV-AR25M31/AR25M90)	
D521		8-719-075-05	DIODE FR104-A5 (KV-AR25M68)	
D522		8-719-302-43	EL1Z (KV-AR25M31/AR25M90)	
D522		8-719-075-05	DIODE FR104-A5 (KV-AR25M68)	
D523		8-719-302-43	EL1Z (KV-AR25M31/AR25M90)	
D523		8-719-075-05	DIODE FR104-A5 (KV-AR25M68)	
D527		8-719-908-03	GP08D	
D528		8-719-908-03	GP08D	
D531		8-719-081-97	MMDL914T1	
D532		8-719-081-97	MMDL914T1	
D534		1-216-295-91	SHORT CHIP 0	
D600		8-719-911-19	1SS119-25	
D602		8-719-911-19	1SS119-25	
D603		8-719-150-92	RD33EB3T	
D604		8-719-028-72	RGP02-17EL-6433	
D605		8-719-510-22	D3SB60	
D606		8-719-108-18	5P-6M	
D607		8-719-081-97	MMDL914T1	
D608		8-719-110-53	RD20ES-B2	
D609		8-719-311-31	RU-1P	
D610		8-719-043-76	AK04V0	
D611		8-719-075-73	10ELS2N-TB5 (KV-AR25M31/AR25M90)	
D611		8-719-046-74	AU-01Z-V1 (KV-AR25M68)	
D612		8-719-043-52	F5KQ60	
D613		8-719-075-73	10ELS2N-TB5 (KV-AR25M31/AR25M90)	
D613		8-719-046-74	AU-01Z-V1 (KV-AR25M68)	
D614		8-719-075-73	10ELS2N-TB5 (KV-AR25M31/AR25M90)	
D614		8-719-046-74	AU-01Z-V1 (KV-AR25M68)	
D616		8-719-083-56	DIODE 30DF2N-FC5	
D620		8-719-110-72	RD30ESB2	
D621		8-719-071-38	D5S6M	
D622		8-719-177-49	DIODE FMU-G26S	
D623		8-719-082-03	DIODE MM3Z15VT1	
D624		8-719-081-97	MMDL914T1	
D624		8-719-988-61	1SS355TE-17	
D625		8-719-158-39	RD10S-B (KV-AR25M31/AR25M90)	
D625		8-719-977-28	DTZ10B (KV-AR25M68)	
D628		8-719-911-19	1SS119-25	
D631		8-719-068-00	ERC04-06SE	
D632		8-719-068-00	ERC04-06SE	
D633		8-719-948-45	ERA22-08	
D634		8-719-081-97	MMDL914T1	
D635		8-719-081-97	MMDL914T1	
D636		8-719-510-02	D1NS4	
D637		8-719-109-96	RD6.8ES-B1	
D638		8-719-510-48	D1N20R (KV-AR25M31/AR25M90)	
D638		8-719-200-82	11ES2 (KV-AR25M68)	
			<CONNECTOR>	
DY1	*	1-580-798-11	CONNECTOR PIN (DY) 6P	
			<FERRITE BEAD>	
FB300		1-412-911-31	FERRITE 0UH	
FB501		1-410-397-21	FERRITE 1.1UH	
FB502		1-410-397-21	FERRITE 1.1UH	
FB600		1-410-397-21	FERRITE 1.1UH	
FB601		1-410-397-21	FERRITE 1.1UH	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

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REF NO.	PART NO.	DESCRIPTION	REMARK
FB602	1-410-397-21	FERRITE 1.1UH	
FB603	1-410-397-21	FERRITE 1.1UH	
FB604	1-412-911-31	FERRITE 0UH	
FB605	1-410-397-21	FERRITE 1.1UH	
FB606	1-412-911-31	FERRITE 0UH	
FB608	1-412-911-31	FERRITE 0UH	
FB611	1-410-397-21	FERRITE 1.1UH	
FB612	1-410-397-21	FERRITE 1.1UH	
FB613	1-410-397-21	FERRITE 1.1UH	
FB615	1-410-397-21	FERRITE 1.1UH (KV-AR25M31/AR25M68)	
FB615	1-412-911-31	FERRITE 0UH (KV-AR25M90)	
		<IC>	
IC001	8-752-932-89	IC CXP750097-603S (KV-AR25M31/AR25M90)	
IC001	8-752-933-33	IC CXP750097-605S (KV-AR25M68)	
IC002	8-759-371-21	MM1319AFBE	
IC003	8-759-527-72	M24C16-BN6	
IC100	8-759-042-02	S-80743AL-A7-S	
IC301	8-752-095-72	CXA2159S	
IC302	8-759-666-90	IC TDA9181T (KV-AR25M31/AR25M90)	
IC502	8-759-700-07	NJM2903M	
IC503	8-759-980-58	TDA8172	
IC601	8-749-019-09	IC STR-F6456S	
IC602	8-749-920-61	SE-135N	
IC603	8-759-701-59	NJM78M09FA	
IC604	8-759-231-53	TA7805S	
		<CHIP CONDUCTOR>	
JR001	1-216-295-91	SHORT CHIP 0	
JR002	1-216-295-91	SHORT CHIP 0	
JR003	1-216-295-91	SHORT CHIP 0	
JR004	1-216-295-91	SHORT CHIP 0	
JR006	1-216-295-91	SHORT CHIP 0	
JR007	1-216-295-91	SHORT CHIP 0	
JR008	1-216-295-91	SHORT CHIP 0	
JR010	1-216-295-91	SHORT CHIP 0	
JR012	1-216-295-91	SHORT CHIP 0	
JR014	1-216-295-91	SHORT CHIP 0	
JR015	1-216-295-91	SHORT CHIP 0	
JR016	1-216-295-91	SHORT CHIP 0	
JR020	1-216-295-91	SHORT CHIP 0	
JR022	1-216-295-91	SHORT CHIP 0	
JR023	1-216-295-91	SHORT CHIP 0	
JR024	1-216-295-91	SHORT CHIP 0	
JR025	1-216-295-91	SHORT CHIP 0	
JR028	1-216-295-91	SHORT CHIP 0	
JR030	1-216-295-91	SHORT CHIP 0	
JR031	1-216-295-91	SHORT CHIP 0	
JR102	1-216-295-91	SHORT CHIP 0	
JR107	1-216-295-91	SHORT CHIP 0	
JR304	1-216-295-91	SHORT CHIP 0	
JR308	1-216-295-91	SHORT CHIP 0 (KV-AR25M31/AR25M90)	
JR309	1-216-295-91	SHORT CHIP 0	
JR310	1-216-295-91	SHORT CHIP 0	
JR311	1-216-295-91	SHORT CHIP 0	
JR500	1-216-295-91	SHORT CHIP 0	
JR501	1-216-295-91	SHORT CHIP 0	
JR503	1-216-295-91	SHORT CHIP 0	
JR505	1-216-295-91	SHORT CHIP 0	
JR600	1-216-295-91	SHORT CHIP 0	
		<COIL>	
L002	1-414-856-11	INDUCTOR 10UH	
L003	1-414-180-11	INDUCTOR 3.3UH	
L004	1-249-395-11	CARBON 15 5% 1/4W	
L005	1-414-233-22	FERRITE 0UH	
L101	1-414-856-11	INDUCTOR 10UH	
L102	1-414-189-31	INDUCTOR 100UH	
L103	1-414-856-11	INDUCTOR 10UH	
L104	1-414-856-11	INDUCTOR 10UH	
L105	1-414-185-41	INDUCTOR 22UH	
L301	1-414-189-31	INDUCTOR 100UH	
L302	1-414-185-41	INDUCTOR 22UH	
L303	1-414-189-31	INDUCTOR 100UH (KV-AR25M31/AR25M90)	
L304	1-414-189-31	INDUCTOR 100UH (KV-AR25M31/AR25M90)	
L501	1-412-525-31	INDUCTOR 10UH	
L502	1-422-613-11	COIL, AIR CORE	
L503	1-412-525-31	INDUCTOR 10UH	
L504	1-412-525-31	INDUCTOR 10UH	
L507	1-459-111-00	INDUCTOR 10MH	
L511	1-406-978-11	INDUCTOR 150UH	
L513	1-412-551-31	INDUCTOR 1.5MH	
L515	1-459-104-00	COIL, WITH CORE	
L518	1-414-187-11	INDUCTOR 47UH	
L601	1-412-527-11	INDUCTOR 15UH	
L905	1-414-856-11	INDUCTOR 10UH	
		<PHOTO COUPLER>	
PH600	⚠ 8-749-924-35	ON3171-R	
		<IC LINK>	
PS600	1-533-597-41	LINK, IC	
PS601	1-533-597-41	LINK, IC	
		<TRANSISTOR>	
Q001	8-729-216-22	2SA1162-G	
Q002	8-729-010-25	MSD601-RT1	
Q005	8-729-027-24	DTA114TKA-T146	
Q101	8-729-010-25	MSD601-RT1	
Q301	8-729-216-22	2SA1162-G	
Q302	8-729-230-49	2SC2712-YG (KV-AR25M31/AR25M90)	
Q303	8-729-216-22	2SA1162-G (KV-AR25M31/AR25M90)	
Q304	8-729-216-22	2SA1162-G	
Q305	8-729-216-22	2SA1162-G (KV-AR25M31/AR25M90)	
Q306	8-729-230-49	2SC2712-YG (KV-AR25M31/AR25M90)	
Q307	8-729-230-49	2SC2712-YG (KV-AR25M31/AR25M90)	
Q307	8-729-422-27	2SD601A-Q (KV-AR25M68)	
Q308	8-729-216-22	2SA1162-G	
Q309	8-729-421-19	UN2213 (KV-AR25M31/AR25M90)	
Q310	8-729-230-49	2SC2712-YG (KV-AR25M31/AR25M90)	
Q311	8-729-010-25	MSD601-RT1	
Q312	8-729-216-22	2SA1162-G	
Q313	8-729-010-25	MSD601-RT1	
Q314	8-729-216-22	2SA1162-G (KV-AR25M31/AR25M90)	

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REF NO.	PART NO.	DESCRIPTION		REMARK	
Q315	8-729-421-19	UN2213			
Q316	8-729-216-22	2SA1162-G			
Q317	8-729-216-22	2SA1162-G			
Q503	8-729-010-25	MSD601-RT1			
Q505	8-729-931-45	IRF614			
Q506	8-729-119-80	2SC2688-LK			
Q507	8-729-216-22	2SA1162-G			
Q509	8-729-010-25	MSD601-RT1			
Q511	8-729-048-07	2SD2578-CA			
Q600	8-729-119-78	2SC2785-HFE			
Q601	8-729-023-22	2SD2114K			
Q602	8-729-010-25	MSD601-RT1			
Q603	8-729-424-08	UN2111			
Q604	8-729-200-17	2SA1091-O			
Q605	8-729-044-30	2SK2845-LB102			
Q606	8-729-010-25	MSD601-RT1			
Q607	8-729-823-22	2SC3576			
Q608	8-729-010-25	MSD601-RT1			
		<RESISTOR>			
R001	1-414-233-22	FERRITE	0UH		
R002	1-216-025-11	RES-CHIP	100	5%	1/10W
R003	1-216-073-91	RES-CHIP	10K	5%	1/10W
R004	1-216-025-11	RES-CHIP	100	5%	1/10W
R005	1-216-025-11	RES-CHIP	100	5%	1/10W
R008	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R010	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R011	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R012	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R013	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R014	1-216-025-11	RES-CHIP	100	5%	1/10W
R015	1-216-025-11	RES-CHIP	100	5%	1/10W
R018	1-216-033-00	RES-CHIP	220	5%	1/10W
R019	1-216-073-91	RES-CHIP	10K	5%	1/10W
R020	1-216-045-00	RES-CHIP	680	5%	1/10W
R021	1-216-073-91	RES-CHIP	10K	5%	1/10W
R022	1-216-025-11	RES-CHIP	100	5%	1/10W
R023	1-216-049-11	RES-CHIP	1K	5%	1/10W
R024	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R025	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R026	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R027	1-216-049-11	RES-CHIP	1K	5%	1/10W
R028	1-216-073-91	RES-CHIP	10K	5%	1/10W
R029	1-216-049-11	RES-CHIP	1K	5%	1/10W
R031	1-216-049-11	RES-CHIP	1K	5%	1/10W
R032	1-216-025-11	RES-CHIP	100	5%	1/10W
R034	1-216-049-11	RES-CHIP	1K	5%	1/10W
R035	1-216-025-11	RES-CHIP	100	5%	1/10W
R036	1-216-025-11	RES-CHIP	100	5%	1/10W
R037	1-216-025-11	RES-CHIP	100	5%	1/10W
R038	1-216-049-11	RES-CHIP	1K	5%	1/10W
R040	1-216-025-11	RES-CHIP	100	5%	1/10W
R041	1-216-025-11	RES-CHIP	100	5%	1/10W
R042	1-216-295-91	SHORT CHIP	0		
R043	1-216-049-11	RES-CHIP	1K	5%	1/10W
R044	1-216-025-11	RES-CHIP	100	5%	1/10W
R045	1-414-233-22	FERRITE	0UH		
R046	1-216-049-11	RES-CHIP	1K	5%	1/10W
R047	1-414-233-22	FERRITE	0UH		
R048	1-216-073-91	RES-CHIP	10K	5%	1/10W

REF NO.	PART NO.	DESCRIPTION		REMARK	
R050	1-216-073-91	RES-CHIP	10K	5%	1/10W
R053	1-216-049-11	RES-CHIP	1K	5%	1/10W
R058	1-216-295-91	SHORT CHIP	0		
R059	1-216-295-91	SHORT CHIP	0		
R060	1-216-295-91	SHORT CHIP	0		
R061	1-216-295-91	SHORT CHIP	0		
R062	1-216-041-00	RES-CHIP	470	5%	1/10W
R063	1-216-041-00	RES-CHIP	470	5%	1/10W
R064	1-216-041-00	RES-CHIP	470	5%	1/10W
R065	1-216-041-00	RES-CHIP	470	5%	1/10W
R066	1-216-049-11	RES-CHIP	1K	5%	1/10W
R067	1-216-049-11	RES-CHIP	1K	5%	1/10W
R068	1-216-041-00	RES-CHIP	470	5%	1/10W
R101	1-216-025-11	RES-CHIP	100	5%	1/10W
R102	1-216-025-11	RES-CHIP	100	5%	1/10W
R105	1-216-295-91	SHORT CHIP	0		
R109	1-216-041-00	RES-CHIP	470	5%	1/10W
R111	1-216-025-11	RES-CHIP	100	5%	1/10W
R112	1-216-025-11	RES-CHIP	100	5%	1/10W
R113	1-216-025-11	RES-CHIP	100	5%	1/10W
R225	1-216-033-00	RES-CHIP	220	5%	1/10W
R226	1-216-033-00	RES-CHIP	220	5%	1/10W
R227	1-216-033-00	RES-CHIP	220	5%	1/10W
R237	1-216-295-91	SHORT CHIP	0		
R301	1-216-113-00	RES-CHIP	470K	5%	1/10W
R302	1-216-295-91	SHORT CHIP	0		
R303	1-216-049-11	RES-CHIP	1K	5%	1/10W
R304	1-216-073-91	RES-CHIP	10K	5%	1/10W
R308	1-216-025-11	RES-CHIP	100	5%	1/10W
R309	1-216-025-11	RES-CHIP	100	5%	1/10W
R310	1-216-025-11	RES-CHIP	100	5%	1/10W
R311	1-216-041-00	RES-CHIP (KV-AR25M31/AR25M90)	470	5%	1/10W
R312	1-216-039-00	RES-CHIP (KV-AR25M31/AR25M90)	390	5%	1/10W
R313	1-216-037-00	RES-CHIP (KV-AR25M31/AR25M90)	330	5%	1/10W
R314	1-216-083-00	RES-CHIP (KV-AR25M31/AR25M90)	27K	5%	1/10W
R315	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
R316	1-216-037-00	RES-CHIP (KV-AR25M31/AR25M90)	330	5%	1/10W
R317	1-216-091-00	RES-CHIP (KV-AR25M31/AR25M90)	56K	5%	1/10W
R318	1-216-039-00	RES-CHIP (KV-AR25M31/AR25M90)	390	5%	1/10W
R319	1-216-025-11	RES-CHIP	100	5%	1/10W
R320	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R321	1-216-073-91	RES-CHIP	10K	5%	1/10W
R322	1-216-033-00	RES-CHIP	220	5%	1/10W
R323	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
R324	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
R326	1-216-029-00	RES-CHIP	150	5%	1/10W
R327	1-216-033-00	RES-CHIP	220	5%	1/10W
R328	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R329	1-216-041-00	RES-CHIP	470	5%	1/10W
R331	1-216-295-91	SHORT CHIP	0		
R332	1-216-033-00	RES-CHIP	220	5%	1/10W
R335	1-216-045-00	RES-CHIP	680	5%	1/10W
R338	1-216-037-00	RES-CHIP	330	5%	1/10W
R339	1-216-033-00	RES-CHIP	220	5%	1/10W
R340	1-216-025-11	RES-CHIP	100	5%	1/10W

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REF NO.	PART NO.	DESCRIPTION		REMARK	
R345	1-216-081-00	RES-CHIP	22K	5%	1/10W
R348	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R349	1-216-073-91	RES-CHIP	10K	5%	1/10W
R350	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R351	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
R354	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R355	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R356	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R357	1-216-079-00	RES-CHIP	18K	5%	1/10W
R358	1-216-049-11	RES-CHIP	1K	5%	1/10W
R359	1-216-033-00	RES-CHIP	220	5%	1/10W
R360	1-216-033-00	RES-CHIP	220	5%	1/10W
R361	1-216-073-91	RES-CHIP	10K	5%	1/10W
R362	1-216-075-00	RES-CHIP	12K	5%	1/10W
R363	1-216-079-00	RES-CHIP	18K	5%	1/10W
R364	1-216-295-91	SHORT CHIP	0		
R365	1-216-033-00	RES-CHIP	220	5%	1/10W
R366	1-216-073-91	RES-CHIP	10K	5%	1/10W
R367	1-216-073-91	RES-CHIP	10K	5%	1/10W
R368	1-216-073-91	RES-CHIP	10K	5%	1/10W
R370	1-216-033-00	RES-CHIP	220	5%	1/10W
R371	1-216-083-00	RES-CHIP (KV-AR25M31/AR25M90)	27K	5%	1/10W
R372	1-216-091-00	RES-CHIP (KV-AR25M31/AR25M90)	56K	5%	1/10W
R375	1-216-025-11	RES-CHIP (KV-AR25M31 ONLY)	100	5%	1/10W
R376	1-216-081-00	RES-CHIP	22K	5%	1/10W
R377	1-216-121-11	RES-CHIP	1M	5%	1/10W
R378	1-216-053-00	RES-CHIP (KV-AR25M31/AR25M90)	1.5K	5%	1/10W
R379	1-218-179-11	RES-CHIP (KV-AR25M31/AR25M90)	10M	5%	1/10W
R381	1-216-295-91	SHORT CHIP (KV-AR25M31/AR25M90)	0		
R382	1-216-065-91	RES-CHIP (KV-AR25M31/AR25M90)	4.7K	5%	1/10W
R383	1-216-049-11	RES-CHIP (KV-AR25M31/AR25M90)	1K	5%	1/10W
R384	1-216-041-00	RES-CHIP (KV-AR25M31/AR25M90)	470	5%	1/10W
R385	1-216-029-00	RES-CHIP (KV-AR25M31/AR25M90)	150	5%	1/10W
R391	1-216-295-91	SHORT CHIP (KV-AR25M31/AR25M90)	0		
R500	1-249-417-11	CARBON	1K	5%	1/4W
R501	1-216-049-11	RES-CHIP	1K	5%	1/10W
R505	1-218-756-11	METAL CHIP	150K	0.5%	1/10W
R506	1-216-685-11	METAL CHIP	27K	0.5%	1/10W
R507	1-249-389-11	CARBON	4.7	5%	1/4W
R508	1-216-473-11	METAL OXIDE	56	5%	3W
R509	1-216-475-11	METAL OXIDE	120	5%	3W
R510	1-215-884-11	METAL OXIDE	47	5%	2W
R511	1-215-910-00	METAL OXIDE	68	5%	3W
R515	1-215-913-11	METAL OXIDE	220	5%	3W
R516	1-216-081-00	RES-CHIP	22K	5%	1/10W
R518	1-247-807-31	CARBON	100	5%	1/4W
R519	1-215-913-11	METAL OXIDE	220	5%	3W
R520	1-215-445-00	METAL	10K	1%	1/4W
R522	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R523	1-249-411-11	CARBON	330	5%	1/4W
R526	1-208-804-11	METAL CHIP	8.2K	0.5%	1/10W
R527	1-216-001-00	RES-CHIP	10	5%	1/10W
R528	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R529	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R531	1-247-843-11	CARBON	3.3K	5%	1/4W
R533	1-249-417-11	CARBON	1K	5%	1/4W
R534	1-216-361-00	METAL OXIDE	0.22	5%	2W
R535	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R536	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R537	1-208-802-11	METAL CHIP	6.8K	0.5%	1/10W
R540	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R541	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R542	1-216-295-91	SHORT CHIP	0		
R543	1-216-437-00	METAL OXIDE	5.6K	5%	1W
R544	1-215-917-11	METAL OXIDE	1K	5%	3W
R545	1-216-077-91	RES-CHIP	15K	5%	1/10W
R546	1-216-077-91	RES-CHIP	15K	5%	1/10W
R547	1-216-085-91	RES-CHIP	33K	5%	1/10W
R549	1-215-453-00	METAL	22K	1%	1/4W
R550	1-216-097-11	RES-CHIP	100K	5%	1/10W
R551	1-249-421-11	CARBON	2.2K	5%	1/4W
R552	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R553	1-215-453-00	METAL	22K	1%	1/4W
R554	1-215-457-00	METAL	33K	1%	1/4W
R556	1-215-437-00	METAL	4.7K	1%	1/4W
R558	1-247-843-11	CARBON	3.3K	5%	1/4W
R559	1-249-429-11	CARBON	10K	5%	1/4W
R560	1-216-073-91	RES-CHIP	10K	5%	1/10W
R562	1-249-401-11	CARBON	47	5%	1/4W
R565	1-216-073-91	RES-CHIP	10K	5%	1/10W
R567	1-216-105-91	RES-CHIP	220K	5%	1/10W
R568	1-249-383-11	CARBON	1.5	5%	1/4W
R570	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R571	1-215-443-00	METAL	8.2K	1%	1/4W
R573	1-216-089-91	RES-CHIP	47K	5%	1/10W
R577	1-215-913-11	METAL OXIDE	220	5%	3W
R578	1-216-369-00	METAL OXIDE	1	5%	2W
R579	1-216-097-11	RES-CHIP	100K	5%	1/10W
R580	1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R581	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R582	1-218-760-11	METAL CHIP	220K	0.5%	1/10W
R584	1-208-834-11	METAL CHIP	150K	0.5%	1/10W
R585	1-249-385-11	CARBON	2.2	5%	1/4W
R587	1-218-760-11	METAL CHIP	220K	0.5%	1/10W
R588	1-215-888-00	METAL OXIDE	220	5%	2W
R589	1-215-888-00	METAL OXIDE	220	5%	2W
R590	1-215-465-00	METAL	68K	1%	1/4W
R591	1-260-288-11	CARBON	0.47	5%	1/2W
R593	1-260-288-11	CARBON	0.47	5%	1/2W
R594	1-260-288-11	CARBON	0.47	5%	1/2W
R596	1-215-917-11	METAL OXIDE	1K	5%	3W
R597	1-247-750-11	CARBON	680	5%	1/2W
R598	1-249-438-11	CARBON	56K	5%	1/4W
R599	1-249-389-11	CARBON	4.7	5%	1/4W
R600	1-249-438-11	CARBON	56K	5%	1/4W
R601	1-249-419-11	CARBON	1.5K	5%	1/4W
R602	1-249-389-11	CARBON	4.7	5%	1/4W
R603	1-215-485-00	METAL	470K	1%	1/4W
R604	1-216-097-11	RES-CHIP	100K	5%	1/10W
R607	1-249-425-11	CARBON	4.7K	5%	1/4W
R608	1-240-205-91	METAL	22M	5%	1/2W
R609	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R610	1-216-073-91	RES-CHIP	10K	5%	1/10W
R611	1-216-089-91	RES-CHIP	47K	5%	1/10W
R612	1-216-045-00	RES-CHIP	680	5%	1/10W

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

A B1

REF NO.		PART NO.	DESCRIPTION			REMARK
R614		1-216-041-00	RES-CHIP	470	5%	1/10W
R615		1-216-369-00	METAL OXIDE	1	5%	2W
R616		1-260-302-51	CARBON	6.8	5%	1/2W
R617		1-247-791-91	CARBON	22	5%	1/4W
R619		1-260-128-11	CARBON	270K	5%	1/2W
R620		1-129-720-00	FILM	0.033UF	5.00%	630V
R621		1-215-864-00	METAL OXIDE	150	5%	1W
R623		1-216-095-00	RES-CHIP	82K	5%	1/10W
R624		1-216-089-91	RES-CHIP	47K	5%	1/10W
R626		1-216-049-11	RES-CHIP	1K	5%	1/10W
R627		1-240-251-11	CEMENTED	6.8	5%	10W
R629		1-247-747-11	CARBON	470	5%	1/2W
R630		1-249-429-11	CARBON	10K	5%	1/4W
R631		1-216-089-91	RES-CHIP	47K	5%	1/10W
R632		1-220-886-11	FUSIBLE	0.1	10%	1W
R634	⚠	1-240-917-91	METAL	8.2M	5%	1W
R635		1-216-492-11	METAL OXIDE	82K	5%	3W
R636		1-215-924-00	METAL OXIDE	15K	5%	3W
R637		1-216-492-11	METAL OXIDE	82K	5%	3W
R639		1-216-361-21	METAL OXIDE	0.22	5%	2W
R640		1-249-415-11	CARBON	680	5%	1/4W
R641		1-216-361-21	METAL OXIDE	0.22	5%	2W
R642		1-249-419-11	CARBON	1.5K	5%	1/4W
R643		1-247-843-11	CARBON	3.3K	5%	1/4W
R644		1-249-419-11	CARBON	1.5K	5%	1/4W
R646		1-215-924-00	METAL OXIDE	15K	5%	3W
R647		1-249-387-11	CARBON	3.3	5%	1/4W
R648		1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R649		1-249-417-11	CARBON	1K	5%	1/4W
R650		1-215-882-00	METAL OXIDE	22	5%	2W
R652		1-215-900-11	METAL OXIDE	22K	5%	2W
R653		1-215-873-00	METAL OXIDE	4.7K	5%	1W
R654		1-216-369-00	METAL OXIDE	1	5%	2W
R656		1-249-417-11	CARBON	1K	5%	1/4W
R657		1-260-127-11	CARBON	220K	5%	1/2W
R659		1-216-049-11	RES-CHIP	1K	5%	1/10W
R660		1-216-073-91	RES-CHIP	10K	5%	1/10W
R661		1-215-873-00	METAL OXIDE	4.7K	5%	1W
R682		1-219-134-11	FUSIBLE (KV-AR25M31/AR25M90)	0.1	10%	1/4W
R682		1-533-597-41	LINK, IC (KV-AR25M68)			
R909		1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R910		1-216-065-91	RES-CHIP	4.7K	5%	1/10W
			<RELAY>			
RY600		1-755-214-11	RELAY, AC POWER			
RY601		1-755-214-11	RELAY, AC POWER			
			<SWITCH>			
S501		1-572-707-11	SWITCH, LEVER			
S502		1-572-707-11	SWITCH, LEVER			
			<TRANSFORMER>			
T501		1-437-195-11	TRANSFORMER, HORIZONTAL DRIVE			
T503	⚠	1-453-284-21	TRANSFORMER ASSY FLY BACK (NX-4009//M314) (KV-AR25M31)			
T503	⚠	1-453-284-11	TRANSFORMER ASSY FLY BACK (NX-4009//M314) (KV-AR25M68/AR25M90)			
T504		1-431-693-11	TRANSFORMER, HORIZONTAL LINEAR			
T505		1-426-981-71	TRANSFORMER, FERRITE (PMT)			
T601	⚠	1-429-707-12	TRANSFORMER, LINE FILTER (KV-AR25M31/AR25M90)			
T601	⚠	1-419-819-11	COIL, LINE FILTER (KV-AR25M68)			
T603	⚠	1-431-976-41	TRANSFORMER, CONVERTER			
T604	⚠	1-431-852-11	TRANSFORMER, CONVERTER (SRT)			
			<THERMISTOR>			
TH600		1-803-586-11	THERMISTOR, NTC			
			<THERMISTOR>			
THP600		1-803-540-11	THERMISTOR			
			<TUNER>			
TU101	⚠	8-598-451-60	TUNER, FSS BTF-WG441 (KV-AR25M31)			
	⚠	8-598-451-30	TUNER, FSS BTF-WG441 (KV-AR25M90)			
	⚠	8-598-451-20	TUNER, FSS BTF-WG441 (KV-AR25M68)			
			<VARISTOR>			
VDR600		1-803-830-11	VARISTOR (ERZV14D621)			
			<CRYSTAL>			
X001		1-781-174-21	VIBRATOR, CERAMIC			
X301		1-781-134-21	VINRATOR, CRYSTAL			
X302		1-781-132-21	VIBRATOR, CTYSTAL			

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* A-1131-652-A B1 BOARD MOUNTED (KV-AR25M31/AR25M90)
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<CAPACITOR>

C1513	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C1514	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C1515	1-163-243-11	CERAMIC CHIP	47PF	5.00%	50V
C1517	1-164-005-11	CERAMIC CHIP	0.47UF		25V
C1518	1-126-967-11	ELECT	47UF	20.00%	50V
C1519	1-163-249-11	CERAMIC CHIP	82PF	5.00%	50V
C1520	1-163-249-11	CERAMIC CHIP	82PF	5.00%	50V
C1522	1-164-005-11	CERAMIC CHIP	0.47UF		25V
C1523	1-163-255-11	CERAMIC CHIP	150PF	5.00%	50V
C1524	1-163-247-91	CERAMIC CHIP	68PF	5.00%	50V
C1525	1-163-249-11	CERAMIC CHIP	82PF	5.00%	50V
C1526	1-163-249-11	CERAMIC CHIP	82PF	5.00%	50V
C1528	1-164-005-11	CERAMIC CHIP	0.47UF		25V
C1529	1-163-255-11	CERAMIC CHIP	150PF	5.00%	50V
C1530	1-163-247-91	CERAMIC CHIP	68PF	5.00%	50V
C1543	1-126-933-11	ELECT	100UF	20.00%	16V
C1544	1-165-319-11	CERAMIC CHIP	0.1UF		50V
C1555	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C1556	1-163-038-91	CERAMIC CHIP	0.1UF		25V

B1 B8

REF NO.	PART NO.	DESCRIPTION			REMARK
		<CONNECTOR>			
CN1501 *	1-564-511-11	PLUG, CONNECTOR 8P			
CN1502 *	1-564-508-11	PLUG, CONNECTOR 5P			
CN1503	1-764-811-11	CONNECTOR, BOARD TO BOARD 10P			
		<DIODE>			
D1501	8-719-158-35	RD9.1S-B			
		<IC>			
IC1502	8-759-439-64	HEF4053BT			
		<COIL>			
L1501	1-414-856-11	INDUCTOR	10UH		
L1506	1-414-857-11	INDUCTOR	100UH		
L1507	1-414-187-11	INDUCTOR	47UH		
L1508	1-414-187-11	INDUCTOR	47UH		
L1509	1-414-857-11	INDUCTOR	100UH		
L1510	1-414-187-11	INDUCTOR	47UH		
L1511	1-414-187-11	INDUCTOR	47UH		
		<TRANSISTOR>			
Q1501	8-729-010-25	MSD601-RT1			
Q1502	8-729-216-22	2SA1162-G			
Q1503	8-729-010-25	MSD601-RT1			
Q1504	8-729-010-25	MSD601-RT1			
Q1505	8-729-010-25	MSD601-RT1			
Q1506	8-729-010-25	MSD601-RT1			
Q1507	8-729-216-22	2SA1162-G			
Q1509	8-729-010-25	MSD601-RT1			
Q1510	8-729-010-25	MSD601-RT1			
Q1511	8-729-216-22	2SA1162-G			
Q1514	8-729-010-25	MSD601-RT1			
Q1515	8-729-010-25	MSD601-RT1			
Q1516	8-729-216-22	2SA1162-G			
Q1520	8-729-010-25	MSD601-RT1			
Q1522	8-729-010-25	MSD601-RT1			
Q1523	8-729-216-22	2SA1162-G			
		<RESISTOR>			
R1501	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1502	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1503	1-216-025-11	RES-CHIP	100	5%	1/10W
R1504	1-216-025-11	RES-CHIP	100	5%	1/10W
R1506	1-216-025-11	RES-CHIP	100	5%	1/10W
R1507	1-216-081-00	RES-CHIP	22K	5%	1/10W
R1508	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1511	1-216-033-00	RES-CHIP	220	5%	1/10W
R1512	1-216-005-00	RES-CHIP	15	5%	1/10W
R1515	1-216-041-00	RES-CHIP	470	5%	1/10W
R1516	1-216-025-11	RES-CHIP	100	5%	1/10W
R1517	1-216-075-00	RES-CHIP	12K	5%	1/10W
R1520	1-216-079-00	RES-CHIP	18K	5%	1/10W
R1522	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1523	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1528	1-216-033-00	RES-CHIP	220	5%	1/10W
R1529	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
R1531	1-216-045-00	RES-CHIP	680	5%	1/10W
R1537	1-216-041-00	RES-CHIP	470	5%	1/10W
R1538	1-216-041-00	RES-CHIP	470	5%	1/10W
R1540	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1541	1-216-041-00	RES-CHIP	470	5%	1/10W
R1542	1-216-041-00	RES-CHIP	470	5%	1/10W
R1543	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1545	1-216-041-00	RES-CHIP	470	5%	1/10W
R1547	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1548	1-216-025-11	RES-CHIP	100	5%	1/10W
R1549	1-216-075-00	RES-CHIP	12K	5%	1/10W
R1551	1-216-081-00	RES-CHIP	22K	5%	1/10W
R1552	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1553	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1554	1-216-033-00	RES-CHIP	220	5%	1/10W
R1556	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1559	1-216-041-00	RES-CHIP	470	5%	1/10W
R1560	1-216-041-00	RES-CHIP	470	5%	1/10W
R1561	1-216-041-00	RES-CHIP	470	5%	1/10W
R1562	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1563	1-216-041-00	RES-CHIP	470	5%	1/10W
R1566	1-216-041-00	RES-CHIP	470	5%	1/10W
R1567	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1568	1-216-041-00	RES-CHIP	470	5%	1/10W
R1569	1-216-049-11	RES-CHIP	1K	5%	1/10W

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*	A-1300-783-A	B8 BOARD COMPLETE (KV-AR25M68)			
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	4-382-854-11	SCREW (M3X10), P, SW (+)			
		<CAPACITOR>			
C1305	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C1307	1-164-346-11	CERAMIC CHIP	1UF		16V
C1310	1-126-786-11	ELECT	47UF	20.00%	16V
C1312	1-126-947-11	ELECT	47UF	20.00%	16V
C1330	1-126-964-11	ELECT	10UF	20.00%	50V
C1333	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C1395	1-163-249-11	CERAMIC CHIP	82PF	5.00%	50V
C1401	1-104-661-91	ELECT	330UF	20.00%	16V
C1402	1-126-947-11	ELECT	47UF	20.00%	25V
C1403	1-126-947-11	ELECT	47UF	20.00%	25V
C1404	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C1405	1-126-947-11	ELECT	47UF	20.00%	25V
C1406	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C1407	1-126-934-11	ELECT	220UF	20.00%	16V
C1408	1-126-964-11	ELECT	10UF	20.00%	50V
C1410	1-126-947-11	ELECT	47UF	20.00%	25V
C1411	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C1412	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C1413	1-126-935-11	ELECT	470UF	20.00%	16V
C1414	1-164-346-11	CERAMIC CHIP	1UF		16V
C1415	1-126-947-11	ELECT	47UF	20.00%	25V
C1416	1-164-346-11	CERAMIC CHIP	1UF		16V
C1417	1-126-934-11	ELECT	220UF	20.00%	10V
C1418	1-163-031-91	CERAMIC CHIP	0.01UF		50V
C1419	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V

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REF NO.	PART NO.	DESCRIPTION		REMARK	
C1420	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C1421	1-164-346-11	CERAMIC CHIP	1UF		16V
C1422	1-164-346-11	CERAMIC CHIP	1UF		16V
C1423	1-164-346-11	CERAMIC CHIP	1UF		16V
C1425	1-164-346-11	CERAMIC CHIP	1UF		16V
C1426	1-164-346-11	CERAMIC CHIP	1UF		16V
C1428	1-104-665-11	ELECT	100UF	20.00%	25V
C1429	1-126-789-11	ELECT	33UF	20.00%	25V
C1431	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C1432	1-126-933-11	ELECT	100UF	20.00%	16V
C1433	1-126-947-11	ELECT	47UF	20.00%	16V
C1434	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1435	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C1436	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C1439	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1440	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1441	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1442	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1443	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1444	1-164-005-11	CERAMIC CHIP	0.47UF		25V
C1445	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1446	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1447	1-126-795-11	ELECT	10UF	20.00%	50V
C1448	1-164-005-11	CERAMIC CHIP	0.47UF		25V
C1449	1-126-933-11	ELECT	100UF	20.00%	16V
C1457	1-164-346-11	CERAMIC CHIP	1UF		16V
C1459	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1460	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1461	1-164-346-11	CERAMIC CHIP	1UF		16V
C1462	1-164-346-11	CERAMIC CHIP	1UF		16V
C1464	1-126-933-11	ELECT	100UF	20.00%	16V
C3201	1-126-964-11	ELECT	10UF	20.00%	50V
C3202	1-136-171-00	FILM	0.33UF	5.00%	50V
C3203	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C3220	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C3221	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C3222	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C3223	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C3224	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C3225	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C3226	1-126-964-11	ELECT	10UF	20.00%	50V
C3227	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C3228	1-107-698-11	ELECT	10UF	20.00%	25V
C3229	1-107-698-11	ELECT	10UF	20.00%	25V
C3238	1-164-005-11	CERAMIC CHIP	0.47UF		25V
C3239	1-136-171-00	FILM	0.33UF	5.00%	50V
C3243	1-163-989-11	CERAMIC CHIP	0.033UF	10.00%	25V
C3244	1-164-346-11	CERAMIC CHIP	1UF		16V
C3245	1-164-005-11	CERAMIC CHIP	0.47UF		25V
C3246	1-163-243-11	CERAMIC CHIP	47PF	5.00%	50V
C3247	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3248	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C3249	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C3250	1-164-346-11	CERAMIC CHIP	1UF		16V
C3251	1-126-964-11	ELECT	10UF	20.00%	50V
C3252	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C3253	1-126-933-11	ELECT	100UF	20.00%	16V
C3254	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C3255	1-163-243-11	CERAMIC CHIP	47PF	5.00%	50V
C3256	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3257	1-164-346-11	CERAMIC CHIP	1UF		16V
C3258	1-163-989-11	CERAMIC CHIP	0.033UF	10.00%	25V

REF NO.	PART NO.	DESCRIPTION		REMARK	
C3259	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3260	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C3262	1-126-947-11	ELECT	47UF	20.00%	16V
C3264	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C3301	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C3302	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C3303	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C3304	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C3305	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C3306	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C3307	1-126-935-11	ELECT	470UF	20.00%	16V
C3308	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C3309	1-104-760-11	CERAMIC CHIP	0.047UF	10.00%	50V
C3310	1-104-760-11	CERAMIC CHIP	0.047UF	10.00%	50V
C3311	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C3312	1-164-489-11	CERAMIC CHIP	0.22UF	10.00%	16V
C3313	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C3314	1-164-489-11	CERAMIC CHIP	0.22UF	10.00%	16V
C3315	1-164-182-11	CERAMIC CHIP	0.0033UF	10.00%	50V
C3316	1-115-185-11	CERAMIC CHIP	0.033UF	10.00%	50V
C3317	1-163-009-91	CERAMIC CHIP	0.001UF	10.00%	50V
C3318	1-164-489-11	CERAMIC CHIP	0.22UF	10.00%	16V
C3319	1-110-501-11	CERAMIC CHIP	0.33UF	10.00%	16V
C3320	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3321	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3322	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3323	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C3324	1-126-935-11	ELECT	470UF	20.00%	16V
C3325	1-104-665-11	ELECT	100UF	20.00%	25V
C3326	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3327	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3328	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3329	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3330	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3331	1-164-489-11	CERAMIC CHIP	0.22UF	10.00%	16V
C3332	1-163-009-91	CERAMIC CHIP	0.001UF	10.00%	50V
C3333	1-115-185-11	CERAMIC CHIP	0.033UF	10.00%	50V
C3334	1-164-182-11	CERAMIC CHIP	0.0033UF	10.00%	50V
C3335	1-163-019-00	CERAMIC CHIP	0.0068UF	10.00%	50V
C3336	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C3337	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C3338	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C6200	1-216-295-91	SHORT CHIP	0		
C6202	1-128-550-11	ELECT	2200UF	20.00%	50V
C6203	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C6204	1-128-550-11	ELECT	2200UF	20.00%	50V
C6205	1-130-495-00	MYLAR	0.1UF	5.00%	50V
C6206	1-128-550-11	ELECT	2200UF	20.00%	50V
C6209	1-130-495-00	MYLAR	0.1UF	5.00%	50V
C6210	1-126-924-11	ELECT	330UF	20.00%	10V
C6211	1-126-924-11	ELECT	330UF	20.00%	10V
C6212	1-126-947-11	ELECT	47UF	20.00%	25V
C6213	1-126-964-11	ELECT	10UF	20.00%	50V
C6217	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C6220	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C6222	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C6223	1-126-960-11	ELECT	1UF	20.00%	50V
C6241	1-126-964-11	ELECT	10UF	20.00%	50V
C6244	1-163-018-00	CERAMIC CHIP	0.0056UF	10.00%	50V
C6245	1-163-018-00	CERAMIC CHIP	0.0056UF	10.00%	50V
C6249	1-216-295-91	SHORT CHIP	0		

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REF NO.		PART NO.	DESCRIPTION	REMARK
			<CONNECTOR>	
CN1300	*	1-564-506-11	PLUG, CONNECTOR 3P	
CN1400	*	1-564-512-11	PLUG, CONNECTOR 9P	
CN1401	*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P	
CN1404	*	1-779-891-11	CONNECTOR, BOARD TO BOARD 8P	
CN1405	*	1-779-892-11	CONNECTOR, BOARD TO BOARD 10P	
CN1406	*	1-779-892-11	CONNECTOR, BOARD TO BOARD 10P	
CN1407	*	1-779-891-11	CONNECTOR, BOARD TO BOARD 8P	
CN1408		1-764-818-11	CONNECTOR, BOARD TO BOARD 10P	
CN1409		1-764-818-11	CONNECTOR, BOARD TO BOARD 10P	
CN1415		1-695-915-11	TAB (CONTACT)	
CN6200	*	1-564-507-11	PLUG, CONNECTOR 4P	
CN6204	*	1-564-509-11	PLUG, CONNECTOR 6P	
CN6206	*	1-564-508-11	PLUG, CONNECTOR 5P	
			<DIODE>	
D1401		8-719-069-60	UDZSTE-179.1B	
D1402		8-719-069-60	UDZSTE-179.1B	
D1403		8-719-069-60	UDZSTE-179.1B	
D1404		8-719-069-60	UDZSTE-179.1B	
D1405		8-719-069-60	UDZSTE-179.1B	
D1406		8-719-069-60	UDZSTE-179.1B	
D1407		8-719-069-60	UDZSTE-179.1B	
D1408		8-719-069-60	UDZSTE-179.1B	
D1409		8-719-069-60	UDZSTE-179.1B	
D1410		8-719-069-60	UDZSTE-179.1B	
D1411		8-719-069-60	UDZSTE-179.1B	
D1412		8-719-069-60	UDZSTE-179.1B	
D1415		8-719-069-60	UDZSTE-179.1B	
D1416		8-719-069-60	UDZSTE-179.1B	
D1418		8-719-069-60	UDZSTE-179.1B	
D3201		8-719-988-61	1SS355TE-17	
D3203		8-719-988-61	1SS355TE-17	
D3301		8-719-081-97	MMDL914T1	
D3302		8-719-081-97	MMDL914T1	
D6210		8-719-914-42	DA204K	
D6211		8-719-081-97	MMDL914T1	
D6212		8-719-081-97	MMDL914T1	
			<IC>	
IC1401		8-752-068-46	CXA1855S	
IC1402		8-759-100-96	UPC4558G2	
IC1403		8-759-231-53	TA7805S	
IC1404		8-759-701-59	NJM78M09FA	
IC3200		8-759-100-96	UPC4558G2	
IC3202		8-759-100-96	UPC4558G2	
IC3204		8-759-100-96	UPC4558G2	
IC3205		8-752-058-68	CXA1315M	
IC3301		8-759-711-10	NJU4066BM	
IC3302		6-702-145-01	IC NJW1139GK1-TE2	
IC6200		8-759-168-24	TA8200AH	
			<JACK>	
J1401		1-784-646-11	TERMINAL, S	
J1402		1-778-387-11	JACK BLOCK, PIN 12P	

REF NO.	PART NO.	DESCRIPTION	REMARK
		<CHIP CONDUCTOR>	
JR1303	1-216-295-91	SHORT CHIP 0	
JR1400	1-216-295-91	SHORT CHIP 0	
JR1405	1-216-295-91	SHORT CHIP 0	
JR1406	1-216-295-91	SHORT CHIP 0	
JR1407	1-216-295-91	SHORT CHIP 0	
JR1409	1-216-295-91	SHORT CHIP 0	
JR1410	1-216-295-91	SHORT CHIP 0	
JR1411	1-216-295-91	SHORT CHIP 0	
JR1415	1-216-295-91	SHORT CHIP 0	
JR1417	1-216-295-91	SHORT CHIP 0	
JR1418	1-216-295-91	SHORT CHIP 0	
JR1419	1-216-295-91	SHORT CHIP 0	
JR1420	1-216-295-91	SHORT CHIP 0	
JR1421	1-216-295-91	SHORT CHIP 0	
JR1422	1-216-295-91	SHORT CHIP 0	
JR1423	1-216-295-91	SHORT CHIP 0	
JR1481	1-216-295-91	SHORT CHIP 0	
JR3201	1-216-295-91	SHORT CHIP 0	
JR3204	1-216-295-91	SHORT CHIP 0	
JR3206	1-216-295-91	SHORT CHIP 0	
JR3209	1-216-295-91	SHORT CHIP 0	
JR3210	1-216-295-91	SHORT CHIP 0	
JR3211	1-216-295-91	SHORT CHIP 0	
JR3302	1-216-295-91	SHORT CHIP 0	
JR3303	1-216-295-91	SHORT CHIP 0	
JR3306	1-216-295-91	SHORT CHIP 0	
JR3307	1-216-295-91	SHORT CHIP 0	
JR3401	1-216-295-91	SHORT CHIP 0	
JR3402	1-216-295-91	SHORT CHIP 0	
JR6200	1-216-295-91	SHORT CHIP 0	
JR6202	1-216-295-91	SHORT CHIP 0	
JR6203	1-216-295-91	SHORT CHIP 0	
JR6204	1-216-295-91	SHORT CHIP 0	
JR6206	1-216-295-91	SHORT CHIP 0	
JR6210	1-216-295-91	SHORT CHIP 0	
JR6223	1-216-295-91	SHORT CHIP 0	
		<COIL>	
L1313	1-414-187-11	INDUCTOR 47UH	
L1314	1-414-856-11	INDUCTOR 10UH	
L1315	1-414-856-11	INDUCTOR 10UH	
L1317	1-414-856-11	INDUCTOR 10UH	
L1402	1-406-665-11	INDUCTOR 100UH	
L1404	1-406-665-11	INDUCTOR 100UH	
L3202	1-414-856-11	INDUCTOR 10UH	
		<TRANSISTOR>	
Q1316	8-729-216-22	2SA1162-G	
Q1317	8-729-230-49	2SC2712-YG	
Q1318	8-729-230-49	2SC2712-YG	
Q1323	8-729-230-49	2SC2712-YG	
Q1324	8-729-230-49	2SC2712-YG	
Q1365	8-729-230-49	2SC2712-YG	
Q1372	8-729-230-49	2SC2712-YG	
Q1402	8-729-216-22	2SA1162-G	
Q1403	8-729-230-49	2SC2712-YG	
Q1404	8-729-230-49	2SC2712-YG	

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REF NO.	PART NO.	DESCRIPTION			REMARK
Q1408	8-729-230-49	2SC2712-YG			
Q1409	8-729-230-49	2SC2712-YG			
Q3201	8-729-224-62	2SK246-GR			
Q3202	8-729-230-49	2SC2712-YG			
Q3203	8-729-230-49	2SC2712-YG			
Q3204	8-729-224-62	2SK246-GR			
Q6201	8-729-421-19	UN2213			
Q6203	8-729-421-19	UN2213			
Q6204	8-729-421-19	UN2213			
Q6208	8-729-421-19	UN2213			
		<RESISTOR>			
R1301	1-216-041-00	RES-CHIP	470	5%	1/10W
R1318	1-216-033-00	RES-CHIP	220	5%	1/10W
R1320	1-216-081-00	RES-CHIP	22K	5%	1/10W
R1343	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1344	1-216-025-11	RES-CHIP	100	5%	1/10W
R1345	1-216-041-00	RES-CHIP	470	5%	1/10W
R1346	1-216-041-00	RES-CHIP	470	5%	1/10W
R1347	1-216-025-11	RES-CHIP	100	5%	1/10W
R1350	1-216-085-91	RES-CHIP	33K	5%	1/10W
R1359	1-216-025-11	RES-CHIP	100	5%	1/10W
R1360	1-216-041-00	RES-CHIP	470	5%	1/10W
R1361	1-216-041-00	RES-CHIP	470	5%	1/10W
R1362	1-216-055-00	RES-CHIP	1.8K	5%	1/10W
R1363	1-216-033-00	RES-CHIP	220	5%	1/10W
R1364	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1365	1-216-081-00	RES-CHIP	22K	5%	1/10W
R1366	1-216-295-91	SHORT CHIP	0		
R1368	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1369	1-216-025-11	RES-CHIP	100	5%	1/10W
R1370	1-216-041-00	RES-CHIP	470	5%	1/10W
R1371	1-216-039-00	RES-CHIP	390	5%	1/10W
R1372	1-216-041-00	RES-CHIP	470	5%	1/10W
R1397	1-216-045-00	RES-CHIP	680	5%	1/10W
R1400	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1403	1-216-033-00	RES-CHIP	220	5%	1/10W
R1404	1-216-295-91	SHORT CHIP	0		
R1406	1-216-013-00	RES-CHIP	33	5%	1/10W
R1407	1-216-033-00	RES-CHIP	220	5%	1/10W
R1408	1-216-031-00	RES-CHIP	180	5%	1/10W
R1409	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1410	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1411	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1412	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1413	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1414	1-216-025-11	RES-CHIP	100	5%	1/10W
R1417	1-216-025-11	RES-CHIP	100	5%	1/10W
R1418	1-216-025-11	RES-CHIP	100	5%	1/10W
R1421	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R1424	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1425	1-216-047-91	RES-CHIP	820	5%	1/10W
R1426	1-216-025-11	RES-CHIP	100	5%	1/10W
R1427	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R1428	1-216-025-11	RES-CHIP	100	5%	1/10W
R1429	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1430	1-216-025-11	RES-CHIP	100	5%	1/10W
R1431	1-216-025-11	RES-CHIP	100	5%	1/10W
R1432	1-216-041-00	RES-CHIP	470	5%	1/10W
R1433	1-216-025-11	RES-CHIP	100	5%	1/10W
R1435	1-216-022-00	RES-CHIP	75	5%	1/10W
R1436	1-216-025-11	RES-CHIP	100	5%	1/10W

REF NO.	PART NO.	DESCRIPTION			REMARK
R1437	1-216-022-00	RES-CHIP	75	5%	1/10W
R1438	1-216-025-11	RES-CHIP	100	5%	1/10W
R1439	1-216-017-91	RES-CHIP	47	5%	1/10W
R1441	1-216-025-11	RES-CHIP	100	5%	1/10W
R1442	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1443	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1444	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1445	1-216-025-11	RES-CHIP	100	5%	1/10W
R1446	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1447	1-216-025-11	RES-CHIP	100	5%	1/10W
R1448	1-216-043-91	RES-CHIP	560	5%	1/10W
R1449	1-249-429-11	CARBON	10K	5%	1/4W
R1450	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1451	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1452	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1453	1-216-025-11	RES-CHIP	100	5%	1/10W
R1454	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1455	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1456	1-216-113-00	RES-CHIP	470K	5%	1/10W
R1457	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1458	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1459	1-216-025-11	RES-CHIP	100	5%	1/10W
R1460	1-216-033-00	RES-CHIP	220	5%	1/10W
R1461	1-216-025-11	RES-CHIP	100	5%	1/10W
R1463	1-249-429-11	CARBON	10K	5%	1/4W
R1464	1-216-113-00	RES-CHIP	470K	5%	1/10W
R1465	1-216-113-00	RES-CHIP	470K	5%	1/10W
R1466	1-216-033-00	RES-CHIP	220	5%	1/10W
R1467	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R1468	1-216-093-91	RES-CHIP	68K	5%	1/10W
R1469	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1470	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1471	1-216-022-00	RES-CHIP	75	5%	1/10W
R1472	1-216-033-00	RES-CHIP	220	5%	1/10W
R1473	1-216-033-00	RES-CHIP	220	5%	1/10W
R1475	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1476	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1477	1-216-047-91	RES-CHIP	820	5%	1/10W
R1478	1-216-051-00	RES-CHIP	1.2K	5%	1/10W
R1479	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1480	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1481	1-216-022-00	RES-CHIP	75	5%	1/10W
R1483	1-216-025-11	RES-CHIP	100	5%	1/10W
R1484	1-216-025-11	RES-CHIP	100	5%	1/10W
R1485	1-216-025-11	RES-CHIP	100	5%	1/10W
R1486	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R1487	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1488	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1489	1-216-022-00	RES-CHIP	75	5%	1/10W
R1490	1-216-025-11	RES-CHIP	100	5%	1/10W
R1491	1-216-025-11	RES-CHIP	100	5%	1/10W
R1492	1-216-021-00	RES-CHIP	68	5%	1/10W
R1493	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R1496	1-216-041-00	RES-CHIP	470	5%	1/10W
R1497	1-216-041-00	RES-CHIP	470	5%	1/10W
R1498	1-216-025-11	RES-CHIP	100	5%	1/10W
R1499	1-216-025-11	RES-CHIP	100	5%	1/10W
R1500	1-216-025-11	RES-CHIP	100	5%	1/10W
R1501	1-216-045-00	RES-CHIP	680	5%	1/10W
R1503	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1504	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1505	1-216-022-00	RES-CHIP	75	5%	1/10W

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REF NO.	PART NO.	DESCRIPTION		REMARK	
R1506	1-216-033-00	RES-CHIP	220	5%	1/10W
R1507	1-216-025-11	RES-CHIP	100	5%	1/10W
R3200	1-216-121-11	RES-CHIP	1M	5%	1/10W
R3201	1-216-121-11	RES-CHIP	1M	5%	1/10W
R3202	1-216-097-11	RES-CHIP	100K	5%	1/10W
R3203	1-216-121-11	RES-CHIP	1M	5%	1/10W
R3204	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R3205	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R3206	1-216-039-00	RES-CHIP	390	5%	1/10W
R3207	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3219	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3220	1-216-097-11	RES-CHIP	100K	5%	1/10W
R3221	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3222	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3223	1-216-045-00	RES-CHIP	680	5%	1/10W
R3224	1-216-101-00	RES-CHIP	150K	5%	1/10W
R3229	1-216-025-11	RES-CHIP	100	5%	1/10W
R3230	1-216-025-11	RES-CHIP	100	5%	1/10W
R3231	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3232	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3233	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R3234	1-216-039-00	RES-CHIP	390	5%	1/10W
R3235	1-216-101-00	RES-CHIP	150K	5%	1/10W
R3236	1-216-113-00	RES-CHIP	470K	5%	1/10W
R3237	1-216-045-00	RES-CHIP	680	5%	1/10W
R3238	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3239	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3240	1-216-081-00	RES-CHIP	22K	5%	1/10W
R3241	1-216-093-91	RES-CHIP	68K	5%	1/10W
R3242	1-216-081-00	RES-CHIP	22K	5%	1/10W
R3245	1-216-097-11	RES-CHIP	100K	5%	1/10W
R3246	1-216-045-00	RES-CHIP	680	5%	1/10W
R3251	1-216-101-00	RES-CHIP	150K	5%	1/10W
R3252	1-216-113-00	RES-CHIP	470K	5%	1/10W
R3253	1-216-045-00	RES-CHIP	680	5%	1/10W
R3254	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3255	1-216-121-11	RES-CHIP	1M	5%	1/10W
R3256	1-216-121-11	RES-CHIP	1M	5%	1/10W
R3257	1-216-097-11	RES-CHIP	100K	5%	1/10W
R3258	1-216-121-11	RES-CHIP	1M	5%	1/10W
R3259	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R3262	1-216-101-00	RES-CHIP	150K	5%	1/10W
R3263	1-216-093-91	RES-CHIP	68K	5%	1/10W
R3267	1-216-049-11	RES-CHIP	1K	5%	1/10W
R3268	1-216-049-11	RES-CHIP	1K	5%	1/10W
R3269	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R3271	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R3273	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R3274	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R3301	1-216-079-00	RES-CHIP	18K	5%	1/10W
R3302	1-216-081-00	RES-CHIP	22K	5%	1/10W
R3303	1-216-079-00	RES-CHIP	18K	5%	1/10W
R3304	1-216-077-91	RES-CHIP	15K	5%	1/10W
R3305	1-216-077-91	RES-CHIP	15K	5%	1/10W
R3306	1-216-081-00	RES-CHIP	22K	5%	1/10W
R3307	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3308	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3309	1-216-025-11	RES-CHIP	100	5%	1/10W
R3310	1-216-025-11	RES-CHIP	100	5%	1/10W
R3311	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3312	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3313	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3314	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3315	1-216-295-91	SHORT CHIP	0		
R3318	1-216-295-91	SHORT CHIP	0		
R6201	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6202	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6203	1-216-295-91	SHORT CHIP	0		
R6209	1-216-049-11	RES-CHIP	1K	5%	1/10W
R6219	1-216-089-91	RES-CHIP	47K	5%	1/10W
R6245	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6246	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6254	1-216-021-00	RES-CHIP	68	5%	1/10W
R6255	1-216-308-00	RES-CHIP	4.7	5%	1/10W
R6258	1-216-021-00	RES-CHIP	68	5%	1/10W
R6259	1-216-308-00	RES-CHIP	4.7	5%	1/10W
R6278	1-216-295-91	SHORT CHIP	0		

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* A-1300-516-A B10 BOARD COMPLETE
(KV-AR25M31/AR25M90)
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4-382-854-11 SCREW (M3X10), P, SW (+)

<CAPACITOR>

C1305	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C1307	1-164-346-11	CERAMIC CHIP	1UF		16V
C1310	1-126-947-11	ELECT	47UF	20.00%	16V
C1312	1-126-947-11	ELECT	47UF	20.00%	16V
C1330	1-126-964-11	ELECT	10UF	20.00%	50V
C1333	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C1395	1-163-249-11	CERAMIC CHIP	82PF	5.00%	50V
C1396	1-125-889-91	CERAMIC CHIP	2.2UF	10%	10V
C1401	1-104-661-91	ELECT	330UF	20.00%	16V
C1402	1-126-947-11	ELECT	47UF	20.00%	25V
C1403	1-126-947-11	ELECT	47UF	20.00%	25V
C1404	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C1405	1-126-947-11	ELECT	47UF	20.00%	25V
C1406	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C1408	1-126-964-11	ELECT	10UF	20.00%	50V
C1410	1-126-947-11	ELECT	47UF	20.00%	25V
C1411	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C1413	1-126-935-11	ELECT	470UF	20.00%	16V
C1414	1-164-346-11	CERAMIC CHIP	1UF		16V
C1415	1-126-947-11	ELECT	47UF	20.00%	25V
C1416	1-164-346-11	CERAMIC CHIP	1UF		16V
C1418	1-163-031-91	CERAMIC CHIP	0.01UF		50V
C1419	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C1421	1-164-346-11	CERAMIC CHIP	1UF		16V
C1422	1-164-346-11	CERAMIC CHIP	1UF		16V
C1423	1-164-346-11	CERAMIC CHIP	1UF		16V
C1425	1-164-346-11	CERAMIC CHIP	1UF		16V
C1426	1-164-346-11	CERAMIC CHIP	1UF		16V
C1428	1-104-665-11	ELECT	100UF	20.00%	25V
C1429	1-104-663-11	ELECT	33UF	20.00%	25V
C1431	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C1432	1-126-933-11	ELECT	100UF	20.00%	16V
C1433	1-126-947-11	ELECT	47UF	20.00%	16V
C1434	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1435	1-163-038-91	CERAMIC CHIP	0.1UF		25V

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REF NO.	PART NO.	DESCRIPTION		REMARK	
C1436	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C1439	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1440	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1441	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1442	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1443	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1444	1-164-005-11	CERAMIC CHIP	0.47UF		25V
C1445	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1446	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1447	1-126-964-11	ELECT	10UF	20.00%	50V
C1448	1-164-005-11	CERAMIC CHIP	0.47UF		25V
C1449	1-126-933-11	ELECT	100UF	20.00%	16V
C1457	1-164-346-11	CERAMIC CHIP	1UF		16V
C1459	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1460	1-163-133-00	CERAMIC CHIP	470PF	5.00%	50V
C1461	1-164-346-11	CERAMIC CHIP	1UF		16V
C1462	1-164-346-11	CERAMIC CHIP	1UF		16V
C1464	1-126-933-11	ELECT	100UF	20.00%	16V
C3201	1-126-964-11	ELECT	10UF	20.00%	50V
C3202	1-136-171-00	FILM	0.33UF	5.00%	50V
C3203	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C3220	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C3221	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C3222	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C3223	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C3224	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C3225	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C3226	1-126-964-11	ELECT	10UF	20.00%	50V
C3227	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C3228	1-107-698-11	ELECT	10UF	20.00%	25V
C3229	1-107-698-11	ELECT	10UF	20.00%	25V
C3238	1-164-005-11	CERAMIC CHIP	0.47UF		25V
C3239	1-136-171-00	FILM	0.33UF	5.00%	50V
C3243	1-163-989-11	CERAMIC CHIP	0.033UF	10.00%	25V
C3244	1-164-346-11	CERAMIC CHIP	1UF		16V
C3245	1-164-005-11	CERAMIC CHIP	0.47UF		25V
C3246	1-163-243-11	CERAMIC CHIP	47PF	5.00%	50V
C3247	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3248	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C3249	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C3250	1-164-346-11	CERAMIC CHIP	1UF		16V
C3251	1-126-964-11	ELECT	10UF	20.00%	50V
C3252	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C3253	1-126-933-11	ELECT	100UF	20.00%	16V
C3254	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C3255	1-163-243-11	CERAMIC CHIP	47PF	5.00%	50V
C3256	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3257	1-164-346-11	CERAMIC CHIP	1UF		16V
C3258	1-163-989-11	CERAMIC CHIP	0.033UF	10.00%	25V
C3259	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3260	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C3262	1-126-947-11	ELECT	47UF	20.00%	16V
C3264	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C3301	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C3302	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C3303	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C3304	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C3305	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C3306	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C3307	1-104-665-11	ELECT	100UF	20.00%	25V
C3308	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C3309	1-104-760-11	CERAMIC CHIP	0.047UF	10.00%	50V

REF NO.	PART NO.	DESCRIPTION		REMARK	
C3310	1-104-760-11	CERAMIC CHIP	0.047UF	10.00%	50V
C3311	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C3312	1-164-489-11	CERAMIC CHIP	0.22UF	10.00%	16V
C3313	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C3314	1-164-489-11	CERAMIC CHIP	0.22UF	10.00%	16V
C3315	1-164-182-11	CERAMIC CHIP	0.0033UF	10.00%	50V
C3316	1-115-185-11	CERAMIC CHIP	0.033UF	10.00%	50V
C3317	1-163-009-91	CERAMIC CHIP	0.001UF	10.00%	50V
C3318	1-164-489-11	CERAMIC CHIP	0.22UF	10.00%	16V
C3319	1-110-501-11	CERAMIC CHIP	0.33UF	10.00%	16V
C3320	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3321	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3322	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3323	1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C3324	1-126-964-11	ELECT	10UF	20.00%	50V
C3325	1-104-665-11	ELECT	100UF	20.00%	25V
C3326	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3327	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3328	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3329	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3330	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3331	1-164-489-11	CERAMIC CHIP	0.22UF	10.00%	16V
C3332	1-163-009-91	CERAMIC CHIP	0.001UF	10.00%	50V
C3333	1-115-185-11	CERAMIC CHIP	0.033UF	10.00%	50V
C3334	1-164-182-11	CERAMIC CHIP	0.0033UF	10.00%	50V
C3335	1-163-019-00	CERAMIC CHIP	0.0068UF	10.00%	50V
C3336	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C3337	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C3338	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C6200	1-216-295-91	SHORT CHIP	0		
C6202	1-128-550-11	ELECT	2200UF	20.00%	50V
C6203	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C6204	1-128-550-11	ELECT	2200UF	20.00%	50V
C6205	1-130-495-00	MYLAR	0.1UF	5.00%	50V
C6206	1-128-550-11	ELECT	2200UF	20.00%	50V
C6209	1-130-495-00	MYLAR	0.1UF	5.00%	50V
C6210	1-126-924-11	ELECT	330UF	20.00%	10V
C6211	1-126-924-11	ELECT	330UF	20.00%	10V
C6212	1-126-947-11	ELECT	47UF	20.00%	25V
C6213	1-126-964-11	ELECT	10UF	20.00%	50V
C6217	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C6220	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C6222	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C6223	1-126-960-11	ELECT	1UF	20.00%	50V
C6241	1-126-964-11	ELECT	10UF	20.00%	50V
C6244	1-163-018-00	CERAMIC CHIP	0.0056UF	10.00%	50V
C6245	1-163-018-00	CERAMIC CHIP	0.0056UF	10.00%	50V
C6249	1-216-295-91	SHORT CHIP	0		

<CONNECTOR>

CN1300	*	1-564-506-11	PLUG, CONNECTOR 3P
CN1400	*	1-564-512-11	PLUG, CONNECTOR 9P
CN1401	*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P
CN1403	*	1-564-506-11	PLUG, CONNECTOR 3P
CN1405	*	1-779-892-11	CONNECTOR, BOARD TO BOARD 10P
CN1406	*	1-779-892-11	CONNECTOR, BOARD TO BOARD 10P
CN1407	*	1-779-891-11	CONNECTOR, BOARD TO BOARD 8P
CN1409		1-764-818-11	CONNECTOR, BOARD TO BOARD 10P
CN6200	*	1-564-507-11	PLUG, CONNECTOR 4P
CN6204	*	1-564-509-11	PLUG, CONNECTOR 6P
CN6206	*	1-564-508-11	PLUG, CONNECTOR 5P

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REF NO.	PART NO.	DESCRIPTION	REMARK
		<DIODE>	
D1401	8-719-069-60	UDZSTE-179.1B	
D1402	8-719-069-60	UDZSTE-179.1B	
D1403	8-719-069-60	UDZSTE-179.1B	
D1404	8-719-069-60	UDZSTE-179.1B	
D1405	8-719-069-60	UDZSTE-179.1B	
D1406	8-719-069-60	UDZSTE-179.1B	
D1407	8-719-069-60	UDZSTE-179.1B	
D1408	8-719-069-60	UDZSTE-179.1B	
D1409	8-719-069-60	UDZSTE-179.1B	
D1410	8-719-069-60	UDZSTE-179.1B	
D1411	8-719-069-60	UDZSTE-179.1B	
D1412	8-719-069-60	UDZSTE-179.1B	
D1415	8-719-069-60	UDZSTE-179.1B	
D1416	8-719-069-60	UDZSTE-179.1B	
D1418	8-719-069-60	UDZSTE-179.1B	
D3201	8-719-988-61	1SS355TE-17	
D3203	8-719-988-61	1SS355TE-17	
D3301	8-719-404-50	MA111-TX	
D3302	8-719-404-50	MA111-TX	
D6210	8-719-914-42	DA204K	
D6211	8-719-404-50	MA111-TX	
D6212	8-719-404-50	MA111-TX	
		<IC>	
IC1401	8-752-068-46	CXA1855S	
IC1402	8-759-100-96	UPC4558G2	
IC1404	8-759-701-59	NJM78M09FA	
IC3200	8-759-100-96	UPC4558G2	
IC3202	8-759-100-96	UPC4558G2	
IC3204	8-759-100-96	UPC4558G2	
IC3205	8-752-058-68	CXA1315M	
IC3301	8-759-711-10	NJU4066BM	
IC3302	6-702-145-01	IC NJW1139GK1-TE2	
IC6200	8-759-168-24	TA8200AH	
		<JACK>	
J1401	1-784-646-11	TERMINAL, S	
J1402	1-778-387-11	JACK BLOCK, PIN 12P	
		<CHIP CONDUCTOR>	
JR1301	1-216-295-91	SHORT CHIP 0	
JR1405	1-216-295-91	SHORT CHIP 0	
JR1406	1-216-295-91	SHORT CHIP 0	
JR1407	1-216-295-91	SHORT CHIP 0	
JR1409	1-216-295-91	SHORT CHIP 0	
JR1410	1-216-295-91	SHORT CHIP 0	
JR1411	1-216-295-91	SHORT CHIP 0	
JR3204	1-216-295-91	SHORT CHIP 0	
JR3209	1-216-295-91	SHORT CHIP 0	
JR6200	1-216-295-91	SHORT CHIP 0	
JR6202	1-216-295-91	SHORT CHIP 0	
JR6203	1-216-295-91	SHORT CHIP 0	
JR6204	1-216-295-91	SHORT CHIP 0	
JR6206	1-216-295-91	SHORT CHIP 0	

REF NO.	PART NO.	DESCRIPTION			REMARK
		<COIL>			
L1313	1-414-187-11	INDUCTOR	47UH		
L1314	1-414-856-11	INDUCTOR	10UH		
L1315	1-414-856-11	INDUCTOR	10UH		
L1317	1-414-856-11	INDUCTOR	10UH		
L1404	1-412-537-31	INDUCTOR	100UH		
L3202	1-414-856-11	INDUCTOR	10UH		
		<TRANSISTOR>			
Q1316	8-729-216-22	2SA1162-G			
Q1317	8-729-230-49	2SC2712-YG			
Q1318	8-729-230-49	2SC2712-YG			
Q1323	8-729-230-49	2SC2712-YG			
Q1324	8-729-230-49	2SC2712-YG			
Q1365	8-729-230-49	2SC2712-YG			
Q1372	8-729-230-49	2SC2712-YG			
Q1402	8-729-216-22	2SA1162-G			
Q1403	8-729-230-49	2SC2712-YG			
Q1404	8-729-230-49	2SC2712-YG			
Q1408	8-729-230-49	2SC2712-YG			
Q1409	8-729-230-49	2SC2712-YG			
Q3201	8-729-224-62	2SK246-GR			
Q3202	8-729-230-49	2SC2712-YG			
Q3203	8-729-230-49	2SC2712-YG			
Q3204	8-729-224-62	2SK246-GR			
Q6201	8-729-421-19	UN2213			
Q6203	8-729-421-19	UN2213			
Q6204	8-729-421-19	UN2213			
Q6208	8-729-421-19	UN2213			
		<RESISTOR>			
R1301	1-216-041-00	RES-CHIP	470	5%	1/10W
R1318	1-216-033-00	RES-CHIP	220	5%	1/10W
R1320	1-216-081-00	RES-CHIP	22K	5%	1/10W
R1343	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1344	1-216-025-11	RES-CHIP	100	5%	1/10W
R1345	1-216-041-00	RES-CHIP	470	5%	1/10W
R1346	1-216-041-00	RES-CHIP	470	5%	1/10W
R1347	1-216-025-11	RES-CHIP	100	5%	1/10W
R1350	1-216-085-91	RES-CHIP	33K	5%	1/10W
R1359	1-216-025-11	RES-CHIP	100	5%	1/10W
R1360	1-216-041-00	RES-CHIP	470	5%	1/10W
R1361	1-216-041-00	RES-CHIP	470	5%	1/10W
R1362	1-216-055-00	RES-CHIP	1.8K	5%	1/10W
R1363	1-216-033-00	RES-CHIP	220	5%	1/10W
R1364	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1365	1-216-081-00	RES-CHIP	22K	5%	1/10W
R1366	1-216-295-91	SHORT CHIP	0		
R1368	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1369	1-216-025-11	RES-CHIP	100	5%	1/10W
R1370	1-216-041-00	RES-CHIP	470	5%	1/10W
R1371	1-216-039-00	RES-CHIP	390	5%	1/10W
R1372	1-216-041-00	RES-CHIP	470	5%	1/10W
R1397	1-216-045-00	RES-CHIP	680	5%	1/10W
R1400	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1403	1-216-033-00	RES-CHIP	220	5%	1/10W
R1404	1-216-295-91	SHORT CHIP	0		
R1406	1-216-013-00	RES-CHIP	33	5%	1/10W
R1407	1-216-033-00	RES-CHIP	220	5%	1/10W

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REF NO.	PART NO.	DESCRIPTION		REMARK	
R1408	1-216-031-00	RES-CHIP	180	5%	1/10W
R1409	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1410	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1411	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1412	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1413	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1414	1-216-025-11	RES-CHIP	100	5%	1/10W
R1417	1-216-025-11	RES-CHIP	100	5%	1/10W
R1418	1-216-025-11	RES-CHIP	100	5%	1/10W
R1421	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R1424	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1425	1-216-047-91	RES-CHIP	820	5%	1/10W
R1426	1-216-025-11	RES-CHIP	100	5%	1/10W
R1427	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R1428	1-216-025-11	RES-CHIP	100	5%	1/10W
R1429	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1430	1-216-025-11	RES-CHIP	100	5%	1/10W
R1431	1-216-025-11	RES-CHIP	100	5%	1/10W
R1432	1-216-041-00	RES-CHIP	470	5%	1/10W
R1433	1-216-025-11	RES-CHIP	100	5%	1/10W
R1435	1-216-022-00	RES-CHIP	75	5%	1/10W
R1436	1-216-025-11	RES-CHIP	100	5%	1/10W
R1437	1-216-022-00	RES-CHIP	75	5%	1/10W
R1438	1-216-025-11	RES-CHIP	100	5%	1/10W
R1439	1-216-017-91	RES-CHIP	47	5%	1/10W
R1441	1-216-025-11	RES-CHIP	100	5%	1/10W
R1442	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1443	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1444	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1445	1-216-025-11	RES-CHIP	100	5%	1/10W
R1446	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1447	1-216-025-11	RES-CHIP	100	5%	1/10W
R1448	1-216-043-91	RES-CHIP	560	5%	1/10W
R1449	1-249-429-11	CARBON	10K	5%	1/4W
R1450	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1451	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1452	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1453	1-216-025-11	RES-CHIP	100	5%	1/10W
R1454	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1455	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1456	1-216-113-00	RES-CHIP	470K	5%	1/10W
R1457	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1458	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1459	1-216-025-11	RES-CHIP	100	5%	1/10W
R1460	1-216-033-00	RES-CHIP	220	5%	1/10W
R1461	1-216-025-11	RES-CHIP	100	5%	1/10W
R1463	1-249-429-11	CARBON	10K	5%	1/4W
R1464	1-216-113-00	RES-CHIP	470K	5%	1/10W
R1465	1-216-113-00	RES-CHIP	470K	5%	1/10W
R1466	1-216-033-00	RES-CHIP	220	5%	1/10W
R1467	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R1468	1-216-093-91	RES-CHIP	68K	5%	1/10W
R1469	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1470	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1471	1-216-022-00	RES-CHIP	75	5%	1/10W
R1472	1-216-033-00	RES-CHIP	220	5%	1/10W
R1473	1-216-033-00	RES-CHIP	220	5%	1/10W
R1475	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1476	1-216-089-91	RES-CHIP	47K	5%	1/10W
R1477	1-216-047-91	RES-CHIP	820	5%	1/10W
R1478	1-216-051-00	RES-CHIP	1.2K	5%	1/10W
R1479	1-216-105-91	RES-CHIP	220K	5%	1/10W

REF NO.	PART NO.	DESCRIPTION		REMARK	
R1480	1-216-105-91	RES-CHIP	220K	5%	1/10W
R1481	1-216-022-00	RES-CHIP	75	5%	1/10W
R1483	1-216-025-11	RES-CHIP	100	5%	1/10W
R1484	1-216-025-11	RES-CHIP	100	5%	1/10W
R1485	1-216-025-11	RES-CHIP	100	5%	1/10W
R1486	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R1487	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1488	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1489	1-216-022-00	RES-CHIP	75	5%	1/10W
R1490	1-216-025-11	RES-CHIP	100	5%	1/10W
R1491	1-216-025-11	RES-CHIP	100	5%	1/10W
R1492	1-216-021-00	RES-CHIP	68	5%	1/10W
R1493	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R1496	1-216-041-00	RES-CHIP	470	5%	1/10W
R1497	1-216-041-00	RES-CHIP	470	5%	1/10W
R1498	1-216-025-11	RES-CHIP	100	5%	1/10W
R1499	1-216-025-11	RES-CHIP	100	5%	1/10W
R1500	1-216-025-11	RES-CHIP	100	5%	1/10W
R1501	1-216-045-00	RES-CHIP	680	5%	1/10W
R1503	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1504	1-216-073-91	RES-CHIP	10K	5%	1/10W
R1505	1-216-022-00	RES-CHIP	75	5%	1/10W
R1506	1-216-033-00	RES-CHIP	220	5%	1/10W
R1507	1-216-025-11	RES-CHIP	100	5%	1/10W
R3200	1-216-121-11	RES-CHIP	1M	5%	1/10W
R3201	1-216-121-11	RES-CHIP	1M	5%	1/10W
R3202	1-216-097-11	RES-CHIP	100K	5%	1/10W
R3203	1-216-121-11	RES-CHIP	1M	5%	1/10W
R3204	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R3205	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R3206	1-216-039-00	RES-CHIP	390	5%	1/10W
R3207	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3219	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3220	1-216-097-11	RES-CHIP	100K	5%	1/10W
R3221	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3222	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3223	1-216-045-00	RES-CHIP	680	5%	1/10W
R3224	1-216-101-00	RES-CHIP	150K	5%	1/10W
R3229	1-216-025-11	RES-CHIP	100	5%	1/10W
R3230	1-216-025-11	RES-CHIP	100	5%	1/10W
R3231	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3232	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3233	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R3234	1-216-039-00	RES-CHIP	390	5%	1/10W
R3235	1-216-101-00	RES-CHIP	150K	5%	1/10W
R3236	1-216-113-00	RES-CHIP	470K	5%	1/10W
R3237	1-216-045-00	RES-CHIP	680	5%	1/10W
R3238	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3239	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3240	1-216-081-00	RES-CHIP	22K	5%	1/10W
R3241	1-216-093-91	RES-CHIP	68K	5%	1/10W
R3242	1-216-081-00	RES-CHIP	22K	5%	1/10W
R3245	1-216-097-11	RES-CHIP	100K	5%	1/10W
R3246	1-216-045-00	RES-CHIP	680	5%	1/10W
R3251	1-216-101-00	RES-CHIP	150K	5%	1/10W
R3252	1-216-113-00	RES-CHIP	470K	5%	1/10W
R3253	1-216-045-00	RES-CHIP	680	5%	1/10W
R3254	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3255	1-216-121-11	RES-CHIP	1M	5%	1/10W
R3256	1-216-121-11	RES-CHIP	1M	5%	1/10W
R3257	1-216-097-11	RES-CHIP	100K	5%	1/10W
R3258	1-216-121-11	RES-CHIP	1M	5%	1/10W

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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REF NO.	PART NO.	DESCRIPTION		REMARK	
R3259	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R3262	1-216-101-00	RES-CHIP	150K	5%	1/10W
R3263	1-216-093-91	RES-CHIP	68K	5%	1/10W
R3267	1-216-049-11	RES-CHIP	1K	5%	1/10W
R3268	1-216-049-11	RES-CHIP	1K	5%	1/10W
R3269	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R3271	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R3273	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R3274	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R3301	1-216-079-00	RES-CHIP	18K	5%	1/10W
R3302	1-216-081-00	RES-CHIP	22K	5%	1/10W
R3303	1-216-079-00	RES-CHIP	18K	5%	1/10W
R3304	1-216-077-91	RES-CHIP	15K	5%	1/10W
R3305	1-216-077-91	RES-CHIP	15K	5%	1/10W
R3306	1-216-081-00	RES-CHIP	22K	5%	1/10W
R3307	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3308	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3309	1-216-025-11	RES-CHIP	100	5%	1/10W
R3310	1-216-025-11	RES-CHIP	100	5%	1/10W
R3311	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3312	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3313	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3314	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3315	1-216-295-91	SHORT CHIP	0		
R3318	1-216-295-91	SHORT CHIP	0		
R6201	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6202	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6203	1-216-295-91	SHORT CHIP	0		
R6209	1-216-049-11	RES-CHIP	1K	5%	1/10W
R6219	1-216-089-91	RES-CHIP	47K	5%	1/10W
R6245	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6246	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R6254	1-216-021-00	RES-CHIP	68	5%	1/10W
R6255	1-216-308-00	RES-CHIP	4.7	5%	1/10W
R6258	1-216-021-00	RES-CHIP	68	5%	1/10W
R6259	1-216-308-00	RES-CHIP	4.7	5%	1/10W
R6278	1-216-295-91	SHORT CHIP	0		

****

*	A-1400-971-A	C6 BOARD MOUNTED (KV-AR25M31/AR25M90)
*	A-1401-614-A	C6 BOARD MOUNTED (KV-AR25M68)
		**********
	4-382-854-11	SCREW (M3X10), P, SW (+)

<CAPACITOR>

C701	1-115-350-51	CERAMIC	0.0047UF		2KV
C702	1-102-074-00	CERAMIC	0.001UF	10.00%	50V
C708	1-102-114-00	CERAMIC	470PF	10.00%	50V
C709	1-102-114-00	CERAMIC	470PF	10.00%	50V
C710	1-102-114-00	CERAMIC	470PF	10.00%	50V
C712	1-102-115-00	CERAMIC	560PF	10.00%	50V
C713	1-102-112-00	CERAMIC	330PF	10.00%	50V
C714	1-102-113-00	CERAMIC	390PF	10.00%	50V
C716	1-126-933-11	ELECT	100UF	20.00%	16V
C717	1-107-651-11	ELECT	4.7UF	20.00%	250V
C1800	1-126-964-11	ELECT	10UF	20.00%	50V
C1803	1-126-964-11	ELECT	10UF	20.00%	50V
C1804	1-126-964-11	ELECT	10UF	20.00%	50V
C1809	1-126-942-61	ELECT	1000UF	20.00%	25V

<CONNECTOR>

CN700		1-695-915-11	TAB (CONTACT)
CN702		1-695-915-11	TAB (CONTACT)
CN703	*	1-564-509-11	PLUG, CONNECTOR 6P
CN704		1-695-915-11	TAB (CONTACT)
CN712		1-564-507-11	PLUG, CONNECTOR 4P
CN1801	*	1-564-509-11	PLUG, CONNECTOR 6P
CN1802	*	1-564-506-11	PLUG, CONNECTOR 3P

<DIODE>

D701	8-719-911-19	1SS119-25
D702	8-719-911-19	1SS119-25
D703	8-719-911-19	1SS119-25
D704	8-719-911-19	1SS119-25
D705	8-719-911-19	1SS119-25
D706	8-719-911-19	1SS119-25
D707	8-719-911-19	1SS119-25
D708	8-719-911-19	1SS119-25
D709	8-719-911-19	1SS119-25
D710	8-719-911-19	1SS119-25
D711	8-719-911-19	1SS119-25
D712	8-719-911-19	1SS119-25
D716	8-719-911-19	1SS119-25
D717	8-719-929-15	HZS9.1NB2 (KV-AR25M31/AR25M90)
D717	8-719-070-16	NNCD9.1A-T1 (KV-AR25M68)
D1803	8-719-911-19	1SS119-25
D1804	8-719-911-19	1SS119-25
D1808	8-719-908-03	GP08D

<IC>

IC1800	8-759-822-38	LA6510

<JACK>

J701	⚠	1-540-071-22	SOCKET, CRT

<COIL>

L701		1-410-667-31	INDUCTOR 22UH
L703		1-414-187-11	INDUCTOR 47UH
L705		1-414-186-31	INDUCTOR 33UH
L707		1-414-187-11	INDUCTOR 47UH

<TRANSISTOR>

Q701	8-729-326-11	2SC2611 (KV-AR25M31/AR25M90)
Q702	8-729-326-11	2SC2611 (KV-AR25M31/AR25M90)
Q703	8-729-326-11	2SC2611 (KV-AR25M31/AR25M90)
Q704	8-729-326-11	2SC2611
Q705	8-729-326-11	2SC2611
Q706	8-729-326-11	2SC2611
Q707	8-729-200-17	2SA1091-O
Q708	8-729-200-17	2SA1091-O
Q709	8-729-200-17	2SA1091-O
Q710	8-729-119-78	2SC2785-HFE

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

C6 F H1

REF NO.	PART NO.	DESCRIPTION			REMARK
Q711	8-729-119-78	2SC2785-HFE			
Q712	8-729-119-78	2SC2785-HFE			
Q714	8-729-255-12	2SC2551-O			
Q1800	8-729-119-76	2SA1175-HFE			
Q1802	8-729-119-78	2SC2785-HFE			
		<RESISTOR>			
R701	1-219-752-11	METAL	100K	5%	1/2W
R705	1-216-392-11	METAL OXIDE	1.8	5%	3W
R710	1-215-923-00	METAL OXIDE	10K	5%	3W
R711	1-260-330-11	CARBON	1.5K	5%	1/2W
R712	1-215-923-00	METAL OXIDE	10K	5%	3W
R713	1-260-330-11	CARBON	1.5K	5%	1/2W
R714	1-215-923-00	METAL OXIDE	10K	5%	3W
R715	1-260-330-11	CARBON	1.5K	5%	1/2W
R716	1-249-405-11	CARBON	100	5%	1/4W
R717	1-249-405-11	CARBON	100	5%	1/4W
R718	1-249-405-11	CARBON	100	5%	1/4W
R719	1-215-469-00	METAL	100K	1%	1/4W
R720	1-249-923-11	CARBON	1K	5%	1/4W
R721	1-215-469-00	METAL (KV-AR25M68 ONLY)	100K	1%	1/4W
R722	1-249-923-11	CARBON	1K	5%	1/4W
R723	1-215-485-00	METAL	470K	1%	1/4W
R724	1-249-923-11	CARBON	1K	5%	1/4W
R725	1-249-424-11	CARBON	3.9K	5%	1/4W
R726	1-249-424-11	CARBON	3.9K	5%	1/4W
R727	1-249-424-11	CARBON	3.9K	5%	1/4W
R728	1-249-408-11	CARBON	180	5%	1/4W
R729	1-249-408-11	CARBON	180	5%	1/4W
R730	1-249-408-11	CARBON	180	5%	1/4W
R731	1-249-401-11	CARBON	47	5%	1/4W
R732	1-249-401-11	CARBON	47	5%	1/4W
R733	1-249-401-11	CARBON	47	5%	1/4W
R734	1-219-743-11	METAL	100	5%	1/2W
R738	1-247-807-31	CARBON	100	5%	1/4W
R739	1-247-807-31	CARBON	100	5%	1/4W
R740	1-247-807-31	CARBON	100	5%	1/4W
R747	1-215-926-00	METAL OXIDE	33K	5%	3W
R749	1-215-927-00	METAL OXIDE	47K	5%	3W
R751	1-216-490-11	METAL OXIDE	39K	5%	3W
R753	1-249-429-11	CARBON	10K	5%	1/4W
R755	1-249-427-11	CARBON	6.8K	5%	1/4W
R756	1-249-427-11	CARBON	6.8K	5%	1/4W
R757	1-249-427-11	CARBON	6.8K	5%	1/4W
R758	1-249-419-11	CARBON	1.5K	5%	1/4W
R759	1-249-419-11	CARBON	1.5K	5%	1/4W
R760	1-249-419-11	CARBON	1.5K	5%	1/4W
R1800	1-249-417-11	CARBON	1K	5%	1/4W
R1801	1-249-426-11	CARBON	5.6K	5%	1/4W
R1802	1-249-387-11	CARBON	3.3	5%	1/4W
R1803	1-249-387-11	CARBON	3.3	5%	1/4W
R1805	1-249-429-11	CARBON	10K	5%	1/4W
R1806	1-249-425-11	CARBON	4.7K	5%	1/4W
R1808	1-249-425-11	CARBON	4.7K	5%	1/4W
R1809	1-249-435-11	CARBON	33K	5%	1/4W
R1810	1-249-435-11	CARBON	33K	5%	1/4W
R1811	1-249-435-11	CARBON	33K	5%	1/4W
R1812	1-249-435-11	CARBON	33K	5%	1/4W
R1821	1-249-435-11	CARBON	33K	5%	1/4W
R1822	1-249-435-11	CARBON	33K	5%	1/4W
R1823	1-249-426-11	CARBON	5.6K	5%	1/4W
R1824	1-249-435-11	CARBON	33K	5%	1/4W
R1825	1-247-843-11	CARBON	3.3K	5%	1/4W
		<VARIABLE RESISTOR>			
RV702	1-241-656-11	RES, ADJ, METAL FILM 110M			
RV1801	1-238-019-11	RES, ADJ, CARBON 47K			
		**********			
	* A-1401-812-A	F BOARD MOUNTED (KV-AR25M31/AR25M90)			
	* A-1401-345-A	F BOARD MOUNTED (KV-AR25M68)			
		**********			
	1-533-223-11	CLIP, FUSE			
		<CAPACITOR>			
C654	⚠ 1-117-703-51	CERAMIC	0.0047UF	99%	250V
C4601	⚠ 1-113-511-11	MYLAR	0.47UF	20.00%	250V
C4602	⚠ 1-113-512-11	MYLAR (KV-AR25M31/AR25M90)	0.68UF	20.00%	250V
C4602	⚠ 1-109-835-51	MYLAR (KV-AR25M68)	0.68UF	20.00%	250V
		<CONNECTOR>			
CN4601	* 1-580-843-11	PIN, CONNECTOR (POWER)			
CN4602	* 1-580-843-11	PIN, CONNECTOR (POWER)			
CN4603	1-695-915-11	TAB (CONTACT)			
		<FUSE>			
F4601	⚠ 1-576-334-11	FUSE, TIME-LAG 5A/250V			
		<RESISTOR>			
R4601	⚠ 1-219-759-91	METAL	1M	5%	1/2W
		<TRANSFORMER>			
T4601	1-424-505-11	TRANSFORMER, LINE FILTER (KV-AR25M31/AR25M90)			
T4601	1-429-505-11	COIL, LINE FILTER (KV-AR25M68)			
T4602	1-431-182-11	TRANSFORMER, LINE FILTER (KV-AR25M31/AR25M90)			
T4602	1-431-182-11	COIL, LINE FILTER (KV-AR25M68)			
		**********			
	* A-1401-972-A	H1 BOARD MOUNTED (KV-AR25M31/AR25M90)			
	* A-1401-322-A	H1 BOARD MOUNTED (KV-AR25M68)			
		**********			
		<CAPACITOR>			
C3900	1-136-153-00	FILM	0.01UF	5.00%	50V
C3902	1-136-153-00	FILM	0.01UF	5.00%	50V

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

H1 **H2** **J**

REF NO.	PART NO.	DESCRIPTION			REMARK
C3904	1-126-947-11	ELECT	47UF	20.00%	25V
C3905	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3906	1-126-963-11	ELECT	4.7UF	20.00%	50V
C3910	1-126-947-11	ELECT	47UF	20.00%	16V
C3911	1-126-947-11	ELECT	47UF	20.00%	16V
C3913	1-126-960-11	ELECT	1UF	20.00%	50V
		<CONNECTOR>			
CN3901 *	1-564-507-11	PLUG, CONNECTOR 4P			
CN3902	1-564-509-11	PLUG, CONNECTOR 6P			
CN3904 *	1-564-512-11	PLUG, CONNECTOR 9P			
CN3905 *	1-564-512-11	PLUG, CONNECTOR 9P			
CN3907 *	1-564-521-11	PLUG, CONNECTOR 6P			
		<DIODE>			
D3900	8-719-070-16	NNCD9.1A-T1			
D3901	8-719-070-16	NNCD9.1A-T1			
D3905	8-719-070-16	NNCD9.1A-T1			
D3907	8-719-070-16	NNCD9.1A-T1			
D3908	8-719-070-16	NNCD9.1A-T1			
		<JACK>			
J3901	1-750-264-11	JACK			
J3902	1-784-646-11	TERMINAL, S			
J3903	1-770-329-13	JACK, PIN 3P			
		<COIL>			
L3901	1-414-183-41	INDUCTOR	10UH		
L3902	1-414-183-41	INDUCTOR	10UH		
		<TRANSISTOR>			
Q3901	8-729-030-02	DTC144ESA			
Q3902	8-729-030-02	DTC144ESA			
		<RESISTOR>			
R3900	1-249-411-11	CARBON	330	5%	1/4W
R3901	1-249-411-11	CARBON	330	5%	1/4W
R3902	1-247-804-11	CARBON	75	5%	1/4W
R3904	1-249-429-11	CARBON	10K	5%	1/4W
R3905	1-249-429-11	CARBON	10K	5%	1/4W
R3907	1-249-426-11	CARBON	5.6K	5%	1/4W
R3908	1-249-413-11	CARBON	470	5%	1/4W
R3909	1-249-417-11	CARBON	1K	5%	1/4W
R3910	1-249-420-11	CARBON	1.8K	5%	1/4W
R3911	1-249-411-11	CARBON	330	5%	1/4W
R3912	1-247-843-11	CARBON	3.3K	5%	1/4W
R3913	1-249-429-11	CARBON	10K	5%	1/4W
R3914	1-249-411-11	CARBON	330	5%	1/4W
R3915	1-249-429-11	CARBON	10K	5%	1/4W
R3916	1-249-401-11	CARBON	47	5%	1/4W
R3917	1-247-804-11	CARBON	75	5%	1/4W
R3918	1-247-807-31	CARBON	100	5%	1/4W
R3919	1-249-409-11	CARBON	220	5%	1/4W
R3920	1-247-807-31	CARBON	100	5%	1/4W
R3921	1-247-807-31	CARBON	100	5%	1/4W
R3922	1-249-421-11	CARBON	2.2K	5%	1/4W

REF NO.	PART NO.	DESCRIPTION			REMARK
		<SWITCH>			
S3902	1-692-431-21	SWITCH, TACTILE			
S3903	1-692-431-21	SWITCH, TACTILE			
S3904	1-692-431-21	SWITCH, TACTILE			
S3905	1-692-431-21	SWITCH, TACTILE			
S3906	1-692-431-21	SWITCH, TACTILE			
S3907	1-692-431-21	SWITCH, TACTILE			
S3908	1-692-431-21	SWITCH, TACTILE			
**********					
*	A-1400-973-A	H2 BOARD MOUNTED (KV-AR25M31/AR25M90)			
*	A-1401-323-A	H2 BOARD MOUNTED (KV-AR25M68)			
		**********			
*	4-055-304-01	HOLDER, LED			
		<CAPACITOR>			
C3912	1-102-114-00	CERAMIC	470PF	10.00%	50V
		<CONNECTOR>			
CN3601 *	1-580-844-11	PIN, CONNECTOR (POWER)			
CN3602 *	1-580-844-11	PIN, CONNECTOR (POWER)			
CN3603 *	1-564-521-11	PLUG, CONNECTOR 6P			
		<DIODE>			
D3906	8-719-083-18	DIODE SPB-25MVWF			
		<IC>			
IC3901	6-600-129-01	IC RPM7140-H5			
		<SWITCH>			
S3601 ⚠	1-571-433-31	SWITCH, PUSH (AC POWER)			
**********					
*	A-1400-975-A	J BOARD MOUNTED (KV-AR25M31/AR25M90)			
*	A-1401-328-A	J BOARD MOUNTED (KV-AR25M68)			
		**********			
		<CAPACITOR>			
C2410	1-126-967-11	ELECT	47UF	20.00%	50V
C2411	1-126-967-11	ELECT	47UF	20.00%	50V
C2412	1-126-967-11	ELECT	47UF	20.00%	50V
C2413	1-102-112-00	CERAMIC	330PF	10.00%	50V
C2414	1-102-112-00	CERAMIC	330PF	10.00%	50V
C2418	1-126-960-11	ELECT	1UF	20.00%	50V
C2419	1-126-960-11	ELECT	1UF	20.00%	50V
		<CONNECTOR>			
CN2410 *	1-564-523-11	PLUG, CONNECTOR 8P			

J P5

REF NO.	PART NO.	DESCRIPTION			REMARK
		<DIODE>			
D2410	8-719-070-16	NNCD9.1A-T1			
D2411	8-719-070-16	NNCD9.1A-T1			
D2412	8-719-070-16	NNCD9.1A-T1			
D2414	8-719-070-16	NNCD9.1A-T1			
D2415	8-719-070-16	NNCD9.1A-T1			
		<JACK>			
J2410	1-784-623-11	BLOCK, PIN JACK 5P			
		<RESISTOR>			
R2410	1-247-804-11	CARBON	75	5%	1/4W
R2411	1-247-804-11	CARBON	75	5%	1/4W
R2412	1-247-804-11	CARBON	75	5%	1/4W
R2414	1-247-887-00	CARBON	220K	5%	1/4W
R2415	1-247-807-31	CARBON	100	5%	1/4W
R2417	1-247-887-00	CARBON	220K	5%	1/4W
R2418	1-247-807-31	CARBON	100	5%	1/4W
R2419	1-249-409-11	CARBON	220	5%	1/4W
R2420	1-249-409-11	CARBON	220	5%	1/4W
R2421	1-249-409-11	CARBON	220	5%	1/4W
**********					
	* A-1401-487-A	P5 BOARD MOUNTED (KV-AR25M68)			
		**********			
		<CAPACITOR>			
C4101	1-126-206-11	ELECT CHIP	100UF	20.00%	6.3V
C4102	1-126-204-11	ELECT CHIP	47UF	20.00%	16V
C4103	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4104	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4105	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4107	1-126-394-11	ELECT CHIP	10UF	20.00%	16V
C4108	1-126-394-11	ELECT CHIP	10UF	20.00%	16V
C4109	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4110	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4113	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4114	1-126-396-11	ELECT CHIP	47UF	20.00%	16V
C4115	1-126-396-11	ELECT CHIP	47UF	20.00%	16V
C4116	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4117	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4118	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4121	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C4122	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4123	1-164-346-11	CERAMIC CHIP	1UF		16V
C4124	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4125	1-164-346-11	CERAMIC CHIP	1UF		16V
C4126	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C4127	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4129	1-126-601-11	ELECT CHIP	2.2UF	20.00%	50V
C4130	1-126-204-11	ELECT CHIP	47UF	20.00%	16V
C4131	1-163-227-11	CERAMIC CHIP	10PF	0.50PF	50V
C4132	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4135	1-126-394-11	ELECT CHIP	10UF	20.00%	16V
C4139	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4140	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4144	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V

REF NO.	PART NO.	DESCRIPTION			REMARK
C4153	1-126-398-11	ELECT CHIP	4.7UF	20.00%	35V
C4154	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4155	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4156	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4157	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C4158	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C4159	1-117-720-11	CERAMIC CHIP	4.7UF		10V
C4160	1-164-346-11	CERAMIC CHIP	1UF		16V
C4164	1-126-394-11	ELECT CHIP	10UF	20.00%	16V
C4168	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4169	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4170	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4172	1-126-204-11	ELECT CHIP	47UF	20.00%	16V
C4173	1-126-204-11	ELECT CHIP	47UF	20.00%	16V
C4175	1-124-779-00	ELECT CHIP	10UF	20.00%	16V
C4179	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4180	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4181	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4189	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C4190	1-126-396-11	ELECT CHIP	47UF	20.00%	16V
C4204	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4205	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V
C4206	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4207	1-126-394-11	ELECT CHIP	10UF	20.00%	16V
C4208	1-126-392-11	ELECT CHIP	100UF	20.00%	6.3V
C4209	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4210	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4211	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4212	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4213	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4214	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4218	1-126-398-11	ELECT CHIP	4.7UF	20.00%	35V
C4219	1-126-398-11	ELECT CHIP	4.7UF	20.00%	35V
C4220	1-126-398-11	ELECT CHIP	4.7UF	20.00%	35V
C4221	1-124-779-00	ELECT CHIP	10UF	20.00%	16V
C4222	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4223	1-126-394-11	ELECT CHIP	10UF	20.00%	16V
C4224	1-164-182-11	CERAMIC CHIP	0.0033UF	10.00%	50V
C4225	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4226	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4227	1-126-394-11	ELECT CHIP	10UF	20.00%	16V
C4228	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4229	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4230	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4231	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4232	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4233	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4234	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4235	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4236	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C4237	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4238	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4239	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4240	1-163-007-11	CERAMIC CHIP	680PF	10.00%	50V
C4241	1-126-603-11	ELECT CHIP	4.7UF	20.00%	35V
C4242	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4243	1-124-779-00	ELECT CHIP	10UF	20.00%	16V
C4244	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4245	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4246	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4248	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C4249	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V

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REF NO.	PART NO.	DESCRIPTION		REMARK
C4255	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V
C4256	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4257	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4258	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4259	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4260	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4262	1-126-394-11	ELECT CHIP	10UF	20.00% 16V
C4263	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V
C4264	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V
C4265	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V
C4301	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4302	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4303	1-124-779-00	ELECT CHIP	10UF	20.00% 16V
C4304	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4305	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4306	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4307	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4308	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4309	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4310	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4311	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4401	1-107-823-11	CERAMIC CHIP	0.47UF	10.00% 16V
C4402	1-126-206-11	ELECT CHIP	100UF	20.00% 6.3V
C4403	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4404	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V
C4405	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V
C4406	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V
C4407	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4408	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V
C4409	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V
C4410	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V
C4411	1-124-779-00	ELECT CHIP	10UF	20.00% 16V
C4412	1-126-394-11	ELECT CHIP	10UF	20.00% 16V
C4413	1-124-779-00	ELECT CHIP	10UF	20.00% 16V
C4414	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4415	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4416	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4417	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4418	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4419	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4420	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4421	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4422	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V
C4423	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4424	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4425	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4426	1-124-779-00	ELECT CHIP	10UF	20.00% 16V
C4427	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4428	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4429	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4430	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4431	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4432	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V
C4433	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4434	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4438	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4439	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4442	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4444	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4445	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4446	1-126-206-11	ELECT CHIP	100UF	20.00% 6.3V

REF NO.	PART NO.	DESCRIPTION		REMARK
C4448	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V
C4449	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V
C4450	1-124-779-00	ELECT CHIP	10UF	20.00% 16V
C4451	1-126-396-11	ELECT CHIP	47UF	20.00% 16V
C4452	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4453	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V
C4454	1-126-206-11	ELECT CHIP	100UF	20.00% 6.3V
C4455	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V
C4465	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V
C4466	1-107-823-11	CERAMIC CHIP	0.47UF	10.00% 16V
C4467	1-126-204-11	ELECT CHIP	47UF	20.00% 16V

<CONNECTOR>

CN4101	* 1-564-523-11	PLUG, CONNECTOR 8P	
CN4102	* 1-564-520-11	PLUG, CONNECTOR 5P	
CN4103	* 1-564-518-11	PLUG, CONNECTOR 3P	
CN4104	1-764-811-11	CONNECTOR, BOARD TO BOARD 10P	
CN4105	1-764-811-11	CONNECTOR, BOARD TO BOARD 10P	
CN4106	* 1-564-519-11	PLUG, CONNECTOR 4P	
CN4108	* 1-564-518-11	PLUG, CONNECTOR 3P	

<DIODE>

D4400	8-719-081-97	MMDL914T1	
D4403	8-719-081-97	MMDL914T1	
D4404	8-719-081-97	MMDL914T1	
D4405	8-719-081-97	MMDL914T1	

<FERRITE BEAD>

FB4401	1-234-330-21	FILTER, EMI	

<FILTER>

FL4101	1-234-177-21	FERRITE	0UH
FL4102	1-234-177-21	FERRITE	0UH
FL4103	1-234-177-21	FERRITE	0UH
FL4104	1-234-177-21	FERRITE	0UH
FL4106	1-234-177-21	FERRITE	0UH
FL4111	1-234-177-21	FERRITE	0UH
FL4112	1-234-177-21	FERRITE	0UH
FL4201	1-233-877-11	FILTER, LOW PASS	
FL4202	1-233-504-21	FILTER, LOW PASS	
FL4203	1-233-504-21	FILTER, LOW PASS	
FL4204	1-234-177-21	FERRITE	0UH
FL4205	1-234-177-21	FERRITE	0UH
FL4206	1-234-177-21	FERRITE	0UH
FL4207	1-234-177-21	FERRITE	0UH
FL4209	1-234-177-21	FERRITE	0UH
FL4301	1-234-177-21	FERRITE	0UH
FL4401	1-234-177-21	FERRITE	0UH
FL4402	1-234-177-21	FERRITE	0UH
FL4403	1-234-177-21	FERRITE	0UH
FL4404	1-234-177-21	FERRITE	0UH
FL4405	1-233-877-11	FILTER, LOW PASS	
FL4406	1-233-504-21	FILTER, LOW PASS	
FL4407	1-233-504-21	FILTER, LOW PASS	
FL4409	1-234-177-21	FERRITE	0UH

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REF NO.	PART NO.	DESCRIPTION	REMARK
		<IC>	
IC4102	8-759-666-90	IC TDA9181T	
IC4104	8-752-099-05	IC CXA2163AQ-T6	
IC4105	8-759-485-79	TC7SET08FU(TE85L	
IC4106	8-759-576-72	LF50CDT-TR	
IC4201	8-759-460-72	BA033FP-E2	
IC4202	8-759-427-92	PST9126NL	
IC4203	6-702-548-01	IC CXD9694O	
IC4301	6-702-550-01	IC CXD9695O	
IC4401	8-759-832-05	IC BA18BC0FP-E2	
IC4402	6-702-549-01	IC CXD9696O	
IC4403	8-759-669-78	TLC2933IPWR-12	
IC4404	8-759-058-56	TC7S02FU(TE85R)	
IC4405	8-759-576-72	LF50CDT-TR	
		<COIL>	
L4101	1-412-029-11	INDUCTOR 10UH	
L4104	1-412-029-11	INDUCTOR 10UH	
L4105	1-412-029-11	INDUCTOR 10UH	
L4201	1-412-031-11	INDUCTOR 47UH	
L4202	1-412-031-11	INDUCTOR 47UH	
L4203	1-412-031-11	INDUCTOR 47UH	
L4204	1-412-031-11	INDUCTOR 47UH	
L4205	1-412-029-11	INDUCTOR 10UH	
L4301	1-412-029-11	INDUCTOR 10UH	
L4401	1-412-029-11	INDUCTOR 10UH	
L4402	1-412-031-11	INDUCTOR 47UH	
L4403	1-412-031-11	INDUCTOR 47UH	
L4404	1-412-031-11	INDUCTOR 47UH	
L4406	1-412-029-11	INDUCTOR 10UH	
L4407	1-412-029-11	INDUCTOR 10UH	
L4408	1-412-029-11	INDUCTOR 10UH	
		<TRANSISTOR>	
Q4106	8-729-120-28	2SC1623-L5L6	
Q4107	8-729-026-49	2SA1037AK-T146-R	
Q4108	1-801-806-11	TR DTC144EKA	
Q4112	8-729-120-28	2SC1623-L5L6	
Q4114	8-729-026-49	2SA1037AK-T146-R	
Q4116	8-729-026-49	2SA1037AK-T146-R	
Q4117	8-729-026-49	2SA1037AK-T146-R	
Q4122	8-729-120-28	2SC1623-L5L6	
Q4123	8-729-120-28	2SC1623-L5L6	
Q4124	8-729-120-28	2SC1623-L5L6	
Q4129	8-729-120-28	2SC1623-L5L6	
Q4130	8-729-120-28	2SC1623-L5L6	
Q4131	8-729-120-28	2SC1623-L5L6	
Q4132	8-729-026-49	2SA1037AK-T146-R	
Q4133	8-729-026-49	2SA1037AK-T146-R	
Q4134	8-729-026-49	2SA1037AK-T146-R	
Q4135	8-729-120-28	2SC1623-L5L6	
Q4136	8-729-120-28	2SC1623-L5L6	
Q4137	8-729-120-28	2SC1623-L5L6	
Q4138	8-729-026-49	2SA1037AK-T146-R	
Q4139	8-729-026-49	2SA1037AK-T146-R	
Q4140	8-729-026-49	2SA1037AK-T146-R	
Q4141	8-729-120-28	2SC1623-L5L6	
Q4142	8-729-120-28	2SC1623-L5L6	
Q4143	8-729-120-28	2SC1623-L5L6	
Q4146	8-729-026-49	2SA1037AK-T146-R	
Q4201	8-729-120-28	2SC1623-L5L6	
Q4202	8-729-120-28	2SC1623-L5L6	
Q4203	8-729-120-28	2SC1623-L5L6	
Q4204	8-729-120-28	2SC1623-L5L6	
Q4205	8-729-120-28	2SC1623-L5L6	
Q4206	8-729-120-28	2SC1623-L5L6	
Q4207	8-729-028-28	2SK2036(TE85L)	
Q4208	8-729-120-28	2SC1623-L5L6	
Q4209	8-729-028-28	2SK2036(TE85L)	
Q4210	8-729-120-28	2SC1623-L5L6	
Q4211	8-729-120-28	2SC1623-L5L6	
Q4212	1-801-806-11	TR DTC144EKA	
Q4213	8-729-120-28	2SC1623-L5L6	
Q4214	8-729-120-28	2SC1623-L5L6	
Q4215	8-729-026-49	2SA1037AK-T146-R	
Q4216	8-729-026-49	2SA1037AK-T146-R	
Q4217	8-729-026-49	2SA1037AK-T146-R	
Q4401	8-729-026-49	2SA1037AK-T146-R	
Q4402	8-729-026-49	2SA1037AK-T146-R	
Q4403	8-729-026-49	2SA1037AK-T146-R	
Q4404	8-729-026-49	2SA1037AK-T146-R	
Q4405	8-729-026-49	2SA1037AK-T146-R	
Q4406	8-729-026-49	2SA1037AK-T146-R	
Q4407	8-729-026-49	2SA1037AK-T146-R	
Q4408	8-729-120-28	2SC1623-L5L6	
Q4409	8-729-026-49	2SA1037AK-T146-R	
Q4410	8-729-120-28	2SC1623-L5L6	
Q4420	8-729-026-49	2SA1037AK-T146-R	
		<RESISTOR>	
R4001	1-125-889-91	CERAMIC CHIP 2.2UF 10% 10V	
R4003	1-216-377-11	METAL OXIDE 4.7 5% 2W	
R4053	1-216-073-91	RES-CHIP 10K 5% 1/10W	
R4054	1-216-073-91	RES-CHIP 10K 5% 1/10W	
R4057	1-216-073-91	RES-CHIP 10K 5% 1/10W	
R4060	1-216-073-91	RES-CHIP 10K 5% 1/10W	
R4067	1-216-073-91	RES-CHIP 10K 5% 1/10W	
R4068	1-216-073-91	RES-CHIP 10K 5% 1/10W	
R4069	1-216-295-91	SHORT CHIP 0	
R4071	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4072	1-216-041-00	RES-CHIP 470 5% 1/10W	
R4073	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4074	1-216-041-00	RES-CHIP 470 5% 1/10W	
R4075	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4076	1-216-041-00	RES-CHIP 470 5% 1/10W	
R4080	1-216-037-00	RES-CHIP 330 5% 1/10W	
R4081	1-216-041-00	RES-CHIP 470 5% 1/10W	
R4082	1-216-295-91	SHORT CHIP 0	
R4083	1-216-041-00	RES-CHIP 470 5% 1/10W	
R4084	1-216-025-11	RES-CHIP 100 5% 1/10W	
R4085	1-216-037-00	RES-CHIP 330 5% 1/10W	
R4086	1-216-041-00	RES-CHIP 470 5% 1/10W	
R4087	1-216-295-91	SHORT CHIP 0	
R4088	1-216-041-00	RES-CHIP 470 5% 1/10W	
R4089	1-216-295-91	SHORT CHIP 0	
R4090	1-216-033-00	RES-CHIP 220 5% 1/10W	
R4091	1-216-041-00	RES-CHIP 470 5% 1/10W	
R4092	1-216-295-91	SHORT CHIP 0	
R4097	1-216-295-91	SHORT CHIP 0	
R4100	1-216-121-11	RES-CHIP 1M 5% 1/10W	

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REF NO.	PART NO.	DESCRIPTION		REMARK	
R4101	1-216-295-91	SHORT CHIP	0		
R4102	1-216-295-91	SHORT CHIP	0		
R4103	1-218-179-11	RES-CHIP	10M	5%	1/10W
R4104	1-216-025-11	RES-CHIP	100	5%	1/10W
R4105	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R4106	1-216-041-00	RES-CHIP	470	5%	1/10W
R4107	1-216-029-00	RES-CHIP	150	5%	1/10W
R4108	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4109	1-216-031-00	RES-CHIP	180	5%	1/10W
R4111	1-216-081-00	RES-CHIP	22K	5%	1/10W
R4112	1-216-033-00	RES-CHIP	220	5%	1/10W
R4114	1-216-025-11	RES-CHIP	100	5%	1/10W
R4115	1-216-025-11	RES-CHIP	100	5%	1/10W
R4120	1-216-083-00	RES-CHIP	27K	5%	1/10W
R4124	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W
R4126	1-208-291-11	RES-CHIP	4.7M	5%	1/10W
R4127	1-208-291-11	RES-CHIP	4.7M	5%	1/10W
R4130	1-208-291-11	RES-CHIP	4.7M	5%	1/10W
R4131	1-216-025-11	RES-CHIP	100	5%	1/10W
R4132	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4133	1-216-017-91	RES-CHIP	47	5%	1/10W
R4135	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R4136	1-216-025-11	RES-CHIP	100	5%	1/10W
R4137	1-216-025-11	RES-CHIP	100	5%	1/10W
R4139	1-216-025-11	RES-CHIP	100	5%	1/10W
R4140	1-216-025-11	RES-CHIP	100	5%	1/10W
R4141	1-216-025-11	RES-CHIP	100	5%	1/10W
R4143	1-216-041-00	RES-CHIP	470	5%	1/10W
R4144	1-216-041-00	RES-CHIP	470	5%	1/10W
R4145	1-216-017-91	RES-CHIP	47	5%	1/10W
R4146	1-216-041-00	RES-CHIP	470	5%	1/10W
R4147	1-216-041-00	RES-CHIP	470	5%	1/10W
R4148	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4149	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4150	1-216-025-11	RES-CHIP	100	5%	1/10W
R4151	1-216-025-11	RES-CHIP	100	5%	1/10W
R4152	1-216-025-11	RES-CHIP	100	5%	1/10W
R4153	1-216-089-91	RES-CHIP	47K	5%	1/10W
R4154	1-216-097-11	RES-CHIP	100K	5%	1/10W
R4155	1-216-089-91	RES-CHIP	47K	5%	1/10W
R4156	1-216-097-11	RES-CHIP	100K	5%	1/10W
R4157	1-216-089-91	RES-CHIP	47K	5%	1/10W
R4158	1-216-097-11	RES-CHIP	100K	5%	1/10W
R4159	1-216-295-91	SHORT CHIP	0		
R4160	1-216-295-91	SHORT CHIP	0		
R4161	1-216-295-91	SHORT CHIP	0		
R4163	1-216-025-11	RES-CHIP	100	5%	1/10W
R4164	1-216-025-11	RES-CHIP	100	5%	1/10W
R4165	1-216-025-11	RES-CHIP	100	5%	1/10W
R4172	1-216-041-00	RES-CHIP	470	5%	1/10W
R4173	1-216-041-00	RES-CHIP	470	5%	1/10W
R4174	1-216-041-00	RES-CHIP	470	5%	1/10W
R4175	1-216-041-00	RES-CHIP	470	5%	1/10W
R4176	1-216-041-00	RES-CHIP	470	5%	1/10W
R4177	1-216-041-00	RES-CHIP	470	5%	1/10W
R4178	1-216-041-00	RES-CHIP	470	5%	1/10W
R4179	1-216-041-00	RES-CHIP	470	5%	1/10W
R4180	1-216-041-00	RES-CHIP	470	5%	1/10W
R4181	1-216-025-11	RES-CHIP	100	5%	1/10W
R4182	1-216-295-91	SHORT CHIP	0		
R4183	1-216-295-91	SHORT CHIP	0		
R4184	1-216-295-91	SHORT CHIP	0		

REF NO.	PART NO.	DESCRIPTION		REMARK	
R4185	1-216-295-91	SHORT CHIP	0		
R4186	1-216-295-91	SHORT CHIP	0		
R4187	1-216-295-91	SHORT CHIP	0		
R4190	1-216-025-11	RES-CHIP	100	5%	1/10W
R4191	1-216-025-11	RES-CHIP	100	5%	1/10W
R4192	1-216-025-11	RES-CHIP	100	5%	1/10W
R4195	1-216-081-00	RES-CHIP	22K	5%	1/10W
R4196	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4197	1-216-081-00	RES-CHIP	22K	5%	1/10W
R4198	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4199	1-216-041-00	RES-CHIP	470	5%	1/10W
R4200	1-216-041-00	RES-CHIP	470	5%	1/10W
R4201	1-216-295-91	SHORT CHIP	0		
R4202	1-216-295-91	SHORT CHIP	0		
R4203	1-216-295-91	SHORT CHIP	0		
R4210	1-216-025-11	RES-CHIP	100	5%	1/10W
R4211	1-216-041-00	RES-CHIP	470	5%	1/10W
R4212	1-216-025-11	RES-CHIP	100	5%	1/10W
R4213	1-216-025-11	RES-CHIP	100	5%	1/10W
R4214	1-216-295-91	SHORT CHIP	0		
R4216	1-208-776-11	METAL CHIP	560	0.5%	1/10W
R4217	1-216-041-00	RES-CHIP	470	5%	1/10W
R4218	1-216-041-00	RES-CHIP	470	5%	1/10W
R4219	1-216-295-91	SHORT CHIP	0		
R4220	1-216-295-91	SHORT CHIP	0		
R4223	1-208-776-11	METAL CHIP	560	0.5%	1/10W
R4224	1-208-776-11	METAL CHIP	560	0.5%	1/10W
R4225	1-208-800-11	METAL CHIP	5.6K	0.5%	1/10W
R4226	1-208-800-11	METAL CHIP	5.6K	0.5%	1/10W
R4227	1-208-800-11	METAL CHIP	5.6K	0.5%	1/10W
R4228	1-216-081-00	RES-CHIP	22K	5%	1/10W
R4229	1-216-033-00	RES-CHIP	220	5%	1/10W
R4230	1-216-033-00	RES-CHIP	220	5%	1/10W
R4231	1-216-033-00	RES-CHIP	220	5%	1/10W
R4232	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R4233	1-216-295-91	SHORT CHIP	0		
R4234	1-216-295-91	SHORT CHIP	0		
R4235	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4236	1-216-295-91	SHORT CHIP	0		
R4237	1-216-081-00	RES-CHIP	22K	5%	1/10W
R4238	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4240	1-216-615-11	METAL CHIP	33	0.5%	1/10W
R4241	1-208-760-11	METAL CHIP	120	0.5%	1/10W
R4242	1-216-603-11	METAL CHIP	10	0.5%	1/10W
R4243	1-216-041-00	RES-CHIP	470	5%	1/10W
R4244	1-216-615-11	METAL CHIP	33	0.5%	1/10W
R4245	1-208-760-11	METAL CHIP	120	0.5%	1/10W
R4246	1-216-603-11	METAL CHIP	10	0.5%	1/10W
R4247	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4249	1-216-615-11	METAL CHIP	33	0.5%	1/10W
R4250	1-208-760-11	METAL CHIP	120	0.5%	1/10W
R4251	1-216-603-11	METAL CHIP	10	0.5%	1/10W
R4252	1-216-041-00	RES-CHIP	470	5%	1/10W
R4253	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R4254	1-216-615-11	METAL CHIP	33	0.5%	1/10W
R4255	1-208-760-11	METAL CHIP	120	0.5%	1/10W
R4256	1-216-603-11	METAL CHIP	10	0.5%	1/10W
R4257	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4258	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4259	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4261	1-216-025-11	RES-CHIP	100	5%	1/10W

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REF NO.	PART NO.	DESCRIPTION		REMARK	
R4273	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4275	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4276	1-216-295-91	SHORT CHIP	0		
R4278	1-216-295-91	SHORT CHIP	0		
R4279	1-216-025-11	RES-CHIP	100	5%	1/10W
R4280	1-216-025-11	RES-CHIP	100	5%	1/10W
R4282	1-216-295-91	SHORT CHIP	0		
R4284	1-216-295-91	SHORT CHIP	0		
R4286	1-216-025-11	RES-CHIP	100	5%	1/10W
R4287	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4288	1-216-025-11	RES-CHIP	100	5%	1/10W
R4290	1-216-295-91	SHORT CHIP	0		
R4291	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4292	1-216-059-00	RES-CHIP	2.7K	5%	1/10W
R4293	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R4295	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4296	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4297	1-216-025-11	RES-CHIP	100	5%	1/10W
R4298	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R4299	1-216-025-11	RES-CHIP	100	5%	1/10W
R4300	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4308	1-216-025-11	RES-CHIP	100	5%	1/10W
R4309	1-216-025-11	RES-CHIP	100	5%	1/10W
R4311	1-208-783-11	METAL CHIP	1.1K	0.5%	1/10W
R4312	1-208-792-11	METAL CHIP	2.7K	0.5%	1/10W
R4313	1-216-631-11	METAL CHIP	150	0.5%	1/10W
R4314	1-216-631-11	METAL CHIP	150	0.5%	1/10W
R4315	1-216-631-11	METAL CHIP	150	0.5%	1/10W
R4317	1-216-017-91	RES-CHIP	47	5%	1/10W
R4318	1-216-017-91	RES-CHIP	47	5%	1/10W
R4319	1-216-017-91	RES-CHIP	47	5%	1/10W
R4320	1-216-017-91	RES-CHIP	47	5%	1/10W
R4321	1-216-017-91	RES-CHIP	47	5%	1/10W
R4322	1-216-073-91	RES-CHIP	10K	5%	1/10W
R4323	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R4329	1-216-295-91	SHORT CHIP	0		
R4330	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4402	1-216-295-91	SHORT CHIP	0		
R4403	1-216-025-11	RES-CHIP	100	5%	1/10W
R4404	1-216-025-11	RES-CHIP	100	5%	1/10W
R4406	1-216-025-11	RES-CHIP	100	5%	1/10W
R4407	1-216-025-11	RES-CHIP	100	5%	1/10W
R4408	1-216-295-91	SHORT CHIP	0		
R4415	1-216-025-11	RES-CHIP	100	5%	1/10W
R4418	1-208-783-11	METAL CHIP	1.1K	0.5%	1/10W
R4419	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R4420	1-208-792-11	METAL CHIP	2.7K	0.5%	1/10W
R4421	1-216-631-11	METAL CHIP	150	0.5%	1/10W
R4422	1-216-631-11	METAL CHIP	150	0.5%	1/10W
R4423	1-216-631-11	METAL CHIP	150	0.5%	1/10W
R4424	1-216-025-11	RES-CHIP	100	5%	1/10W
R4425	1-216-025-11	RES-CHIP	100	5%	1/10W
R4426	1-216-025-11	RES-CHIP	100	5%	1/10W
R4427	1-216-025-11	RES-CHIP	100	5%	1/10W
R4434	1-216-025-11	RES-CHIP	100	5%	1/10W
R4436	1-216-025-11	RES-CHIP	100	5%	1/10W
R4438	1-216-025-11	RES-CHIP	100	5%	1/10W
R4440	1-216-295-91	SHORT CHIP	0		
R4441	1-216-025-11	RES-CHIP	100	5%	1/10W
R4442	1-216-295-91	SHORT CHIP	0		
R4449	1-216-295-91	SHORT CHIP	0		
R4451	1-216-295-91	SHORT CHIP	0		

REF NO.	PART NO.	DESCRIPTION		REMARK	
R4452	1-216-295-91	SHORT CHIP	0		
R4454	1-216-295-91	SHORT CHIP	0		
R4458	1-216-295-91	SHORT CHIP	0		
R4461	1-216-295-91	SHORT CHIP	0		
R4464	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4465	1-208-776-11	METAL CHIP	560	0.5%	1/10W
R4466	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4467	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4468	1-216-295-91	SHORT CHIP	0		
R4469	1-208-776-11	METAL CHIP	560	0.5%	1/10W
R4470	1-208-776-11	METAL CHIP	560	0.5%	1/10W
R4471	1-208-800-11	METAL CHIP	5.6K	0.5%	1/10W
R4472	1-208-800-11	METAL CHIP	5.6K	0.5%	1/10W
R4473	1-208-800-11	METAL CHIP	5.6K	0.5%	1/10W
R4474	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4475	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4476	1-216-017-91	RES-CHIP	47	5%	1/10W
R4477	1-216-017-91	RES-CHIP	47	5%	1/10W
R4478	1-216-033-00	RES-CHIP	220	5%	1/10W
R4479	1-216-025-11	RES-CHIP	100	5%	1/10W
R4480	1-216-015-00	RES-CHIP	39	5%	1/10W
R4481	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4482	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4483	1-216-025-11	RES-CHIP	100	5%	1/10W
R4484	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R4485	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R4487	1-216-089-91	RES-CHIP	47K	5%	1/10W
R4489	1-216-113-00	RES-CHIP	470K	5%	1/10W
R4490	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4491	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4492	1-216-025-11	RES-CHIP	100	5%	1/10W
R4494	1-216-041-00	RES-CHIP	470	5%	1/10W
R4496	1-216-017-91	RES-CHIP	47	5%	1/10W
R4512	1-216-085-91	RES-CHIP	33K	5%	1/10W
R4513	1-216-113-00	RES-CHIP	470K	5%	1/10W
R4514	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R4515	1-216-617-11	METAL CHIP	39	0.5%	1/10W
R4527	1-216-049-11	RES-CHIP	1K	5%	1/10W
R4528	1-216-295-91	SHORT CHIP	0		
R4559	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R4560	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R4561	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R4562	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W
R4563	1-208-810-11	METAL CHIP	15K	0.5%	1/10W
R4564	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R4568	1-216-017-91	RES-CHIP	47	5%	1/10W
R4569	1-216-017-91	RES-CHIP	47	5%	1/10W
R4570	1-216-017-91	RES-CHIP	47	5%	1/10W
R4573	1-216-295-91	SHORT CHIP	0		
RB4201	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB4202	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB4203	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB4204	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB4301	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB4302	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB4303	1-239-409-11	NETWORK RESISTOR (CHIP) 47			
RB4304	1-239-409-11	NETWORK RESISTOR (CHIP) 47			

P5 V1

REF NO.	PART NO.	DESCRIPTION			REMARK
		<CRYSTAL>			
X4102	1-781-612-11	VIBRATOR, CRYSTAL			
**********					
*	A-1347-164-A	V1 BOARD COMPLETE (KV-AR25M31)			
		**********			
		<CAPACITOR>			
C801	1-126-947-11	ELECT	47UF	20.00%	16V
C805	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C806	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C814	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C815	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C816	1-164-505-11	CERAMIC CHIP	2.2UF		16V
C817	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C818	1-163-239-11	CERAMIC CHIP	33PF	5.00%	50V
C820	1-163-239-11	CERAMIC CHIP	33PF	5.00%	50V
C821	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C822	1-163-009-91	CERAMIC CHIP	0.001UF	10.00%	50V
C823	1-126-933-11	ELECT	100UF	20.00%	16V
C826	1-126-963-11	ELECT	4.7UF	20.00%	50V
C829	1-163-247-91	CERAMIC CHIP	68PF	5.00%	50V
C830	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C831	1-126-933-11	ELECT	100UF	20.00%	16V
C832	1-126-964-11	ELECT	10UF	20.00%	50V
C835	1-163-038-91	CERAMIC CHIP	0.1UF		25V
C837	1-126-933-11	ELECT	100UF	20.00%	16V
		<CONNECTOR>			
CN801	* 1-774-812-11	CONNECTOR, BOARD TO BOARD 7P			
CN803	* 1-774-812-11	CONNECTOR, BOARD TO BOARD 7P			
		<DIODE>			
D802	8-719-941-09	DAP202U			
D803	8-719-105-46	RD3.3M-B2			
D804	8-719-105-91	RD5.6M-B2			
		<FERRITE BEAD>			
FB801	1-410-397-21	FERRITE	1.1UH		
FB802	1-410-397-21	FERRITE	1.1UH		
FB803	1-410-397-21	FERRITE	1.1UH		
FB804	1-414-223-11	INDUCTOR	470UH		
FB805	1-410-397-21	FERRITE	1.1UH		
		<IC>			
IC801	8-759-476-87	SAA5261			
		<CHIP CONDUCTOR>			
JR800	1-216-295-91	SHORT CHIP	0		
JR801	1-216-295-91	SHORT CHIP	0		
JR802	1-216-295-91	SHORT CHIP	0		
JR804	1-216-295-91	SHORT CHIP	0		
JR805	1-216-295-91	SHORT CHIP	0		

REF NO.	PART NO.	DESCRIPTION			REMARK
		<TRANSISTOR>			
Q801	8-729-120-28	2SC1623-L5L6			
Q803	8-729-120-28	2SC1623-L5L6			
Q805	8-729-120-28	2SC1623-L5L6			
Q806	8-729-120-28	2SC1623-L5L6			
Q807	8-729-120-28	2SC1623-L5L6			
Q808	8-729-120-28	2SC1623-L5L6			
Q810	8-729-120-28	2SC1623-L5L6			
Q811	8-729-019-01	2SD2394-EF			
Q817	8-729-421-22	UN2211			
		<RESISTOR>			
R800	1-208-806-11	METAL CHIP	10K	0.5%	1/10W
R801	1-216-295-91	SHORT CHIP	0		
R802	1-216-025-11	RES-CHIP	100	5%	1/10W
R803	1-216-295-91	SHORT CHIP	0		
R804	1-216-295-91	SHORT CHIP	0		
R805	1-216-295-91	SHORT CHIP	0		
R807	1-216-295-91	SHORT CHIP	0		
R813	1-216-295-91	SHORT CHIP	0		
R820	1-216-073-91	RES-CHIP	10K	5%	1/10W
R821	1-216-083-00	RES-CHIP	27K	5%	1/10W
R822	1-216-025-11	RES-CHIP	100	5%	1/10W
R824	1-216-295-91	SHORT CHIP	0		
R825	1-216-295-91	SHORT CHIP	0		
R827	1-216-295-91	SHORT CHIP	0		
R828	1-216-025-11	RES-CHIP	100	5%	1/10W
R829	1-216-025-11	RES-CHIP	100	5%	1/10W
R830	1-216-295-91	SHORT CHIP	0		
R831	1-216-295-91	SHORT CHIP	0		
R832	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W
R835	1-216-295-91	SHORT CHIP	0		
R839	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R841	1-216-025-11	RES-CHIP	100	5%	1/10W
R842	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R843	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R844	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R845	1-216-049-11	RES-CHIP	1K	5%	1/10W
R846	1-216-049-11	RES-CHIP	1K	5%	1/10W
R847	1-216-049-11	RES-CHIP	1K	5%	1/10W
R848	1-216-049-11	RES-CHIP	1K	5%	1/10W
R849	1-216-049-11	RES-CHIP	1K	5%	1/10W
R850	1-216-105-91	RES-CHIP	220K	5%	1/10W
R851	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R853	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R857	1-216-077-91	RES-CHIP	15K	5%	1/10W
R861	1-216-049-11	RES-CHIP	1K	5%	1/10W
R862	1-260-095-11	CARBON	470	5%	1/2W
R863	1-216-049-11	RES-CHIP	1K	5%	1/10W
R864	1-216-041-00	RES-CHIP	470	5%	1/10W
R866	1-215-880-00	METAL OXIDE	10	5%	2W
R871	1-216-037-00	RES-CHIP	330	5%	1/10W
R879	1-216-073-91	RES-CHIP	10K	5%	1/10W
R880	1-216-041-00	RES-CHIP	470	5%	1/10W
R882	1-216-049-11	RES-CHIP	1K	5%	1/10W
R884	1-216-025-11	RES-CHIP	100	5%	1/10W

V1 VM1

REF NO.	PART NO.	DESCRIPTION			REMARK
		<CRYSTAL>			
X801	1-578-774-11	VIBRATOR, CRYSTAL			
**********					
*	A-1400-974-A	VM1 BOARD MOUNTED (KV-AR25M31/AR25M90)			
*	A-1401-327-A	VM1 BOARD MOUNTED (KV-AR25M68) **********			
*	4-363-146-71	HEAT SINK, V.OUT (KV-AR25M31/AR25M90)			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
		<CAPACITOR>			
C5900	1-102-115-00	CERAMIC	560PF	10.00%	50V
C5902	1-104-661-91	ELECT	330UF	20.00%	16V
C5903	1-161-830-00	CERAMIC	0.0047UF		500V
C5905	1-126-935-11	ELECT	470UF	20.00%	10V
C5906	1-130-491-00	MYLAR	0.047UF	5.00%	50V
C5907	1-107-638-11	ELECT	33UF	20.00%	160V
C5908	1-106-383-00	MYLAR	0.047UF	10.00%	200V
C5909	1-126-933-11	ELECT	100UF	20.00%	16V
C5910	1-130-471-00	MYLAR	0.001UF	5.00%	50V
C5911	1-107-949-11	ELECT	2.2UF	20.00%	160V
C5912	1-104-999-11	MYLAR	0.1UF	10.00%	200V
C5913	1-130-471-00	MYLAR	0.001UF	5.00%	50V
C5914	1-126-933-11	ELECT	100UF	20.00%	16V
C5916	1-130-491-00	MYLAR	0.047UF	5.00%	50V
C5917	1-126-935-11	ELECT	470UF	20.00%	10V
C5918	1-102-244-00	CERAMIC	220PF	10.00%	500V
C5919	1-136-165-00	FILM	0.1UF	5.00%	50V
		<CONNECTOR>			
CN2801 *	1-564-506-11	PLUG, CONNECTOR 3P (KV-AR25M68 ONLY)			
CN5901 *	1-564-510-11	PLUG, CONNECTOR 7P			
CN5902 *	1-564-506-11	PLUG, CONNECTOR 3P (KV-AR25M31/AR25M90)			
CN5904 *	1-770-723-11	CONNECTOR, BOARD TO BOARD 8P			
		<DIODE>			
D5901	8-719-911-19	1SS119-25			
D5902	8-719-110-86	RD39ES-B			
D5903	8-719-911-19	1SS119-25			
D5904	8-719-110-86	RD39ES-B			
D5905	8-719-911-19	1SS119-25			
D5906	1-249-406-11	CARBON	120	5%	1/4W
D5907	1-249-406-11	CARBON	120	5%	1/4W
		<COIL>			
L5901	1-414-187-11	INDUCTOR	47UH		
		<TRANSISTOR>			
Q5901	8-729-230-45	2SC2458-YGR			
Q5902	8-729-809-26	2SA1606-E			
Q5903	8-729-230-45	2SC2458-YGR			
Q5904	8-729-119-76	2SA1175-HFE			
Q5905	8-729-230-45	2SC2458-YGR			

REF NO.	PART NO.	DESCRIPTION			REMARK
Q5906	8-729-809-29	2SC4159-E			
Q5907	8-729-230-45	2SC2458-YGR			
		<RESISTOR>			
R5901	1-249-401-11	CARBON	47	5%	1/4W
R5902	1-249-414-11	CARBON	560	5%	1/4W
R5903	1-247-734-11	CARBON	39	5%	1/2W
R5904	1-249-411-11	CARBON	330	5%	1/4W
R5905	1-249-417-11	CARBON	1K	5%	1/4W
R5906	1-249-417-11	CARBON	1K	5%	1/4W
R5907	1-249-417-11	CARBON	1K	5%	1/4W
R5908	1-249-383-11	CARBON	1.5	5%	1/4W
R5909	1-249-409-11	CARBON	220	5%	1/4W
R5910	1-249-403-11	CARBON	68	5%	1/4W
R5911	1-249-439-11	CARBON	68K	5%	1/4W
R5912	1-249-437-11	CARBON	47K	5%	1/4W
R5914	1-249-403-11	CARBON	68	5%	1/4W
R5915	1-249-429-11	CARBON	10K	5%	1/4W
R5916	1-249-419-11	CARBON	1.5K	5%	1/4W
R5917	1-249-416-11	CARBON	820	5%	1/4W
R5918	1-249-429-11	CARBON	10K	5%	1/4W
R5919	1-249-417-11	CARBON	1K	5%	1/4W
R5920	1-249-439-11	CARBON	68K	5%	1/4W
R5921	1-216-476-11	METAL OXIDE	180	5%	3W
R5922	1-249-414-11	CARBON	560	5%	1/4W
R5923	1-249-383-11	CARBON	1.5	5%	1/4W
R5925	1-249-400-11	CARBON	39	5%	1/4W
R5927	1-249-416-11	CARBON	820	5%	1/4W
R5929	1-215-880-00	METAL OXIDE	10	5%	2W

****

ACCESSORIES AND PACKING MATERIALS
****

	3-701-910-00	SCREW, SPECIAL (DIA. 3.8X20)
*	4-029-168-01	BAG, PROTECTION (KV-AR25M31/AR25M90)
*	4-037-760-01	BAG, PROTECTION (KV-AR25M68)
*	4-088-012-01	INDIVIDUAL CARTON (KV-AR25M31/AR25M90)
*	4-090-804-01	INDIVIDUAL CARTON (KV-AR25M68)
*	4-090-806-01	CUSHION (LOWER)(KV-AR25M68)
*	4-088-738-01	CUSHION LOWER (KV-AR25M31/AR25M90)
*	4-090-805-01	CUSHION (UPPER) (KV-AR25M68)
*	4-088-739-01	CUSHION UPPER (KV-AR25M31/AR25M90)
	4-090-530-11	MANUAL, INSTRUCTION (KV-AR25M31)
	4-089-670-11	MANUAL, INSTRUCTION (KV-AR25M68)
	4-089-690-11	MANUAL, INSTRUCTION (KV-AR25M90)
	4-392-003-11	BAND, HOLD (KV-AR25M31/AR25M90)

Sony Corporation
Sony Technology Malaysia Sdn. Bhd.
Visual Products

9-872-323-01

English
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SONY

4-089-670-**11** (1)

Trinitron Color TV
เครื่องรับโทรทัศน์สี Trinitron

Operating Instructions **GB**

- Before operating the unit, please read this manual thoroughly and retain it for future reference.

คู่มือการใช้งาน **ไทย**

- ก่อนเริ่มการใช้งานกรุณาอ่านคู่มือนี้โดยละเอียดทั้งหมดและเก็บรักษาคู่มือไว้สำหรับอ้างอิงในโอกาสต่อ ๆไป

FD Trinitron
WEGA

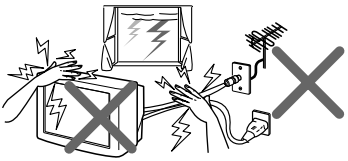
KV-AR34
KV-AR29
KV-AR25

© 2002 Sony Corporation

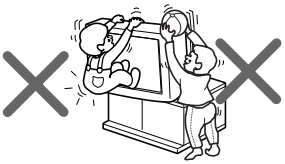
M68
M64

WARNING

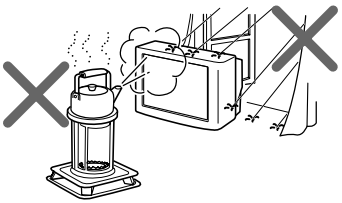
- Dangerously high voltages are present inside the TV.
- TV operating voltage: 220 – 240 V AC.
- Do not plug in the power cord until you have completed making all other connections; otherwise a minimum leakage current might flow through the antenna and other terminals to ground.
- To avoid battery leakage and damage to the remote, remove the batteries from the remote if you are not going to use it for several days. If any liquid leaks from the batteries and touches your skin, immediately wash it away with water.



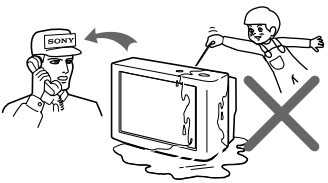
For your own safety, do not touch any part of the TV, the power cord and the antenna cable during lightning storms.



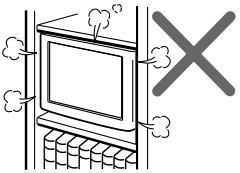
For children's safety, do not leave children alone with the TV. Do not allow children to climb onto it.



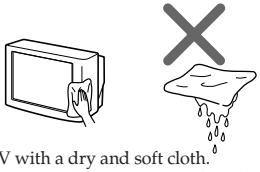
To prevent fire or shock hazard, do not expose the TV to rain or moisture.



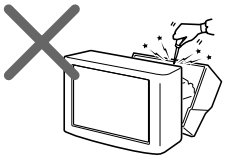
Do not operate the TV if any liquid or solid object falls into it. Have it checked immediately by qualified personnel only.



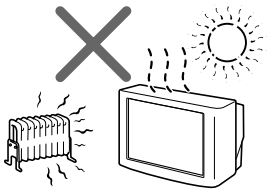
Do not block the ventilation openings of the TV.
Do not install the TV in a confined space, such as a bookcase or built-in cabinet.



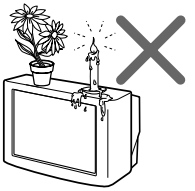
Clean the TV with a dry and soft cloth.
Do not use benzine, thinner, or any other chemicals to clean the TV. Do not attach anything (e.g., adhesive tape, cellophane tape, glue) on the painted cabinet of the TV. Do not scratch the picture tube.



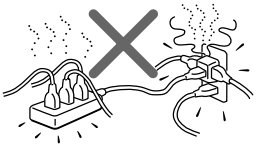
Do not open the cabinet and the rear cover of the TV as high voltages and other hazards are present inside the TV. Refer servicing and disposal of the TV to qualified personnel.



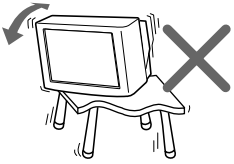
Your TV is recommended for home use only.
Do not use the TV in any vehicle or where it may be subject to excessive dust, heat, moisture or vibrations.



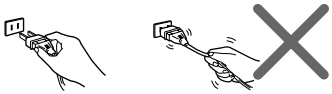
Do not place any objects on the TV.



Do not plug in too many appliances to the same power socket. Do not damage the power cord.



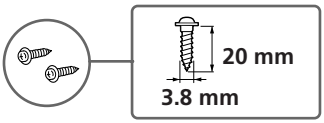
Install the TV on a stable TV stand and floor which can support the TV set weight. Ensure that the TV stand surface is flat and its area is larger than the bottom area of the TV.



Pull the power cord out by the plug. Do not pull the power cord itself. Even if your TV is turned off, it is still connected to the AC power source (mains) as long as the power cord is plugged in. Unplug the TV before moving it or if you are not going to use it for several days.

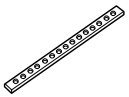
■ Securing the TV

To prevent the TV from falling, use the supplied screws, clamps and band to secure the TV.

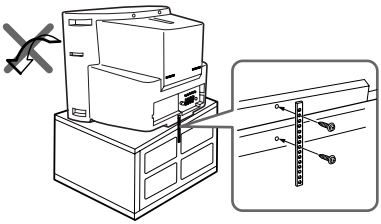


screws

clamps

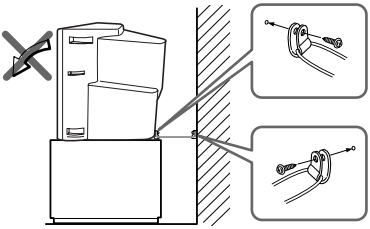


band



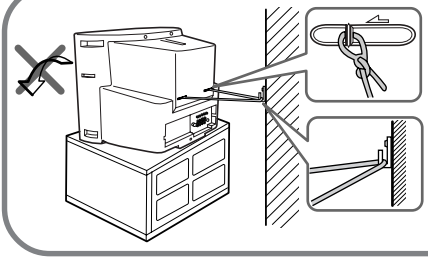
Screw the band to the TV stand and to the provided hole at the rear of your TV.

or



(1) Put a cord or chain through the clamps.
(2) Screw one clamp to a wall or pillar and the other clamp to the provided hole at the rear of your TV.

or



(1) Attach each end of a cord or chain to the provided holders at the rear of your TV.
(2) Securely fix the attached cord or chain to a wall or pillar using an attachment which can support the TV set weight.

Note

- Use only the supplied screws. Use of other screws may damage the TV.

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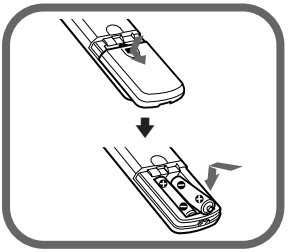
GB

■ Getting Started

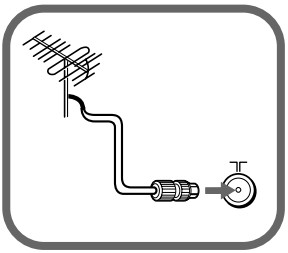


Step 1

Insert the batteries (supplied) into the remote.

Note

- Do not use old or different types of batteries together.

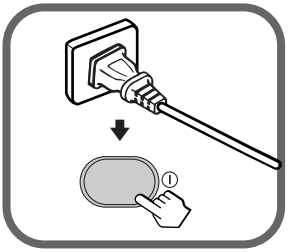


Step 2

Connect the antenna cable (not supplied) to ⊤ (antenna input) at the rear of the TV.

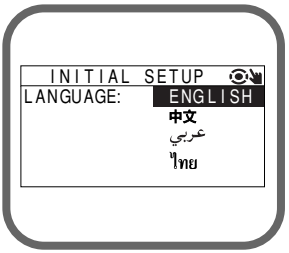
Tip

- You can also connect your TV to other optional components (see page 30).



Step 3

Plug in the power cord, then press ⏻ on the TV to turn it on.

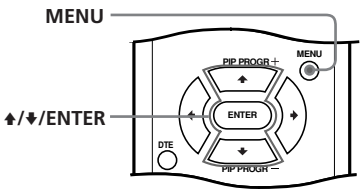


Step 4

Set up the TV by following the instructions of the "INITIAL SETUP"menu (see page 7).

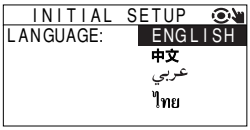
■ Setting up your TV ("INITIAL SETUP")

When you turn on your TV for the first time, the "INITIAL SETUP" menu will appear. This menu allows you to change the menu language, adjust the picture position and preset the TV channels automatically.



1 Press ↑ or ↓ to select the desired menu language (e.g.,"ENGLISH"), then press ENTER.

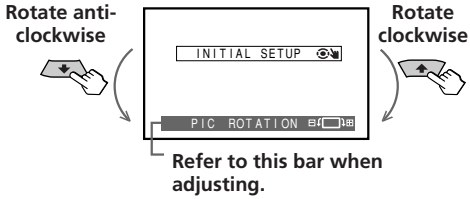
The selected menu language appears.



2 If the "PIC ROTATION" bar is slanted, press ↑ or ↓ to adjust it, then press ENTER.

If no adjustment is necessary, then press ENTER.

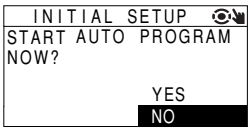
The ⊞ or ⊟ icon on the screen flashes while adjusting.

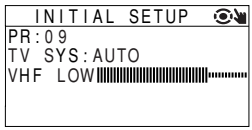


3 Press ↑ or ↓ to select "YES", then press ENTER to preset the channels automatically (see page 27).

The screen will indicate automatic presetting is in progress.

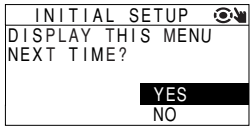
To skip automatic channel presetting, select "NO", then press ENTER.





4 Press ↑ or ↓ to select "NO", then press ENTER. The "INITIAL SETUP" menu will not appear again the next time you turn on the TV by pressing ⏻.

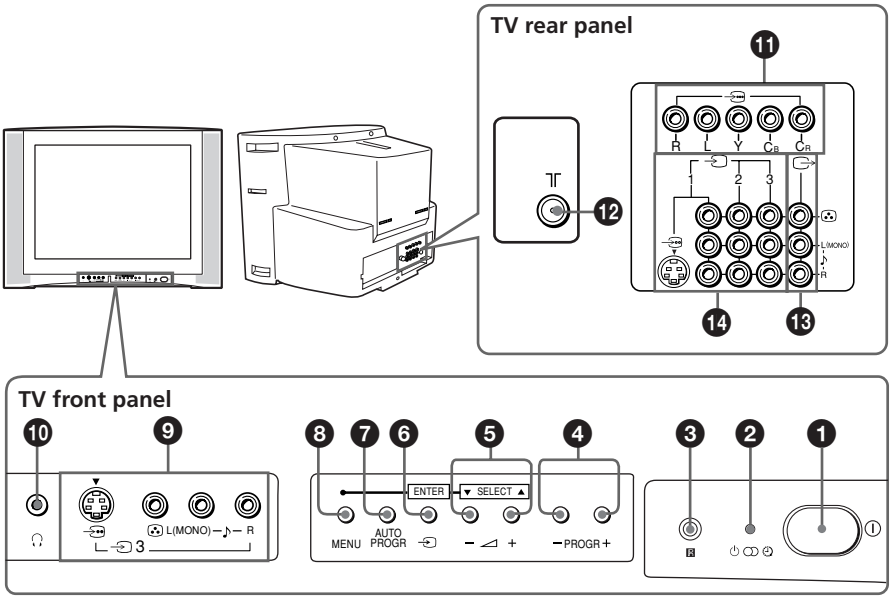
To allow this menu to appear again, select "YES", then press ENTER.



Tips

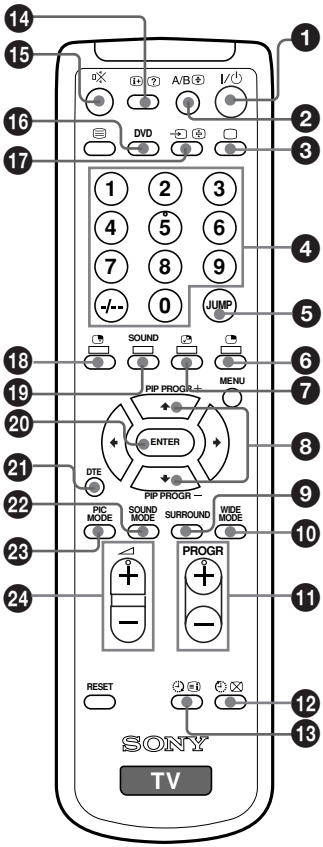
- You can immediately go to the end of the "INITIAL SETUP" menu by pressing MENU.
- You can also set up your TV using the menu system (see page 17).

■ TV front and rear panels



Button/Terminal	Function	Page
❶ ⏻	Turn off or turn on the TV.	6
❷ ⏻	Standby indicator.	–
❷ 🕘	Wake Up indicator.	15
❷	Stereo/bilingual indicator.	16
❸	Remote control sensor.	–
❹ PROGR +/–	Select program number.	–
❺ +/–	Adjust volume.	–
❻	Select TV or video input.	–
❼ AUTO PROGR	Preset channels automatically.	–
Menu operations		
❺ SELECT ▼/▲	Select and adjust items.	19
❻ ENTER	Confirm selected items.	19
❽ MENU	Display or cancel the menu.	19
❾ 3	Video input terminal 3.	30
❿	Headphone jack.	–
⓫	Component video input terminal.	31
⓬	Antenna input terminal.	30
⓭	Monitor output terminal.	30
⓮ 1, 2, 3	Video input terminal 1, 2, 3.	30

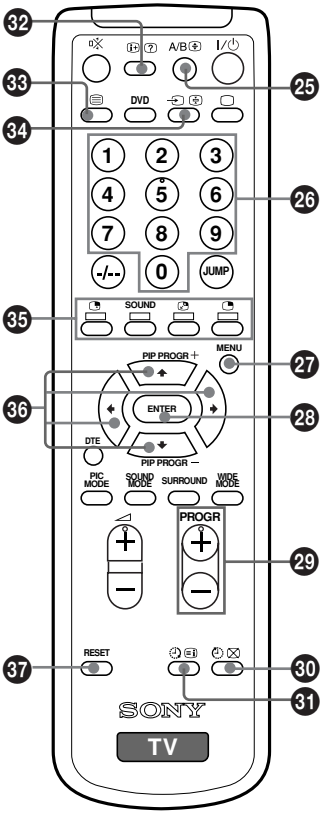
■ Remote control



Button	Function	Page
❶ I/⏻	Turn off temporarily or turn on the TV.	–
❸ ▭	Display the TV input.	–
❹ 0 – 9, -/--	Input numbers.	–
❺ JUMP	Jump to previous program number.	–
❾ SURROUND	Select surround mode.	14
❿ WIDE MODE	Select wide-mode (16:9).	12
⓫ PROGR +/–	Select program number.	–
⓮ i+	Display on-screen information.	–
⓯ 🔇	Mute the sound.	–
⓰ DVD	Select component video input.	31
⓱ ⏎	Select TV or video input.	30
㉑ DTE	Select DTE mode.	12
㉒ SOUND MODE	Select sound mode.	11
㉓ PIC MODE	Select picture mode.	11
㉔ ◿ +/–	Adjust volume.	–
Timer operations		
⓬ ⏲	Set TV to turn off automatically.	15
⓭ ⏲	Set TV to turn on automatically.	15
PIP operations (yellow label) (KV-AR34M64/AR29M64 only)		
❻ ◳	Display a sub screen.	13
❼ ◳	Swap main and sub screens.	13
❽ PIP PROGR +/ PIP PROGR –	Display and change programs in the sub screen.	13,14
⓲ ◳	Select a video input in the sub screen.	13
⓳ SOUND	Swap sound between main and sub screen.	13
⓴ ENTER	Change sub screen to main screen.	14
Stereo/bilingual operations		
❷ A/B	Select stereo/bilingual mode.	16

continue

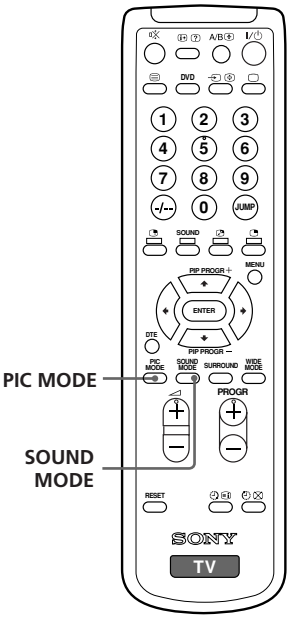
continued



Button	Function	Page
Menu operations		
27 MENU	Display or cancel the menu.	19
28 ENTER	Confirm selected items.	19
36 ↑, ↓, ←, →	Select and adjust items.	19
Teletext operations (green label)		
25	Not function for your TV.	–
26 0 – 9		
29 PROGR +/–		
30		
31		
32		
33		
34		
35 (red, green, yellow, blue)		
37 RESET	Set TV to factory setting.	32

Selecting the picture and sound modes

You can select picture and sound modes and adjust the setting to your preference in the “PERSONAL” option.



Selecting the picture mode

Press PIC MODE to select the desired picture mode.

Select	To
“DYNAMIC”	view high contrast pictures.
“STANDARD”	view normal pictures.
“SOFT”	view mild pictures.
“PERSONAL”	receive the last adjusted picture setting from the “ADJUST” option in the “PICTURE” menu (see page 21).

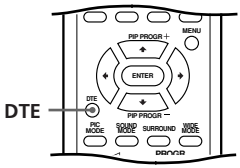
Selecting the sound mode

Press SOUND MODE to select the desired sound mode.

Select	To
“♪ DYNAMIC”	listen to dynamic and clear sound that emphasizes both the low and high tones.
“♪ DRAMA”	listen to sound that emphasizes voice and high tones.
“♪ SOFT”	listen to soft sound.
“♪ PERSONAL”	receive the last adjusted sound setting from the “ADJUST” option in the “SOUND” menu (see page 23).

■ Viewing the picture with DTE

The Digital Texture Enhancer (DTE) feature allows you to enjoy a more natural and vivid picture by optimizing the contrast of each object in the picture.
You can use the DTE button to select “ON” or “OFF”.



Select	To
“ON”	enhance each object’s details and contours with optimum contrast.
“OFF”	cancel DTE.

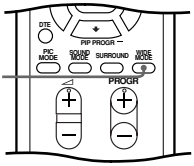
Note

- The DTE mode is not selectable when the “GAME MODE” is turned “ON”.

The DTE logo (DTE Digital Texture Enhancer) and “DTE” are trademarks of Sony Corporation.

■ Viewing the picture in wide mode

When receiving a wide-mode (16:9) signal, the picture will appear “squeezed” (compressed) on your screen. Use the WIDE MODE button to view the picture with the optimal effect.

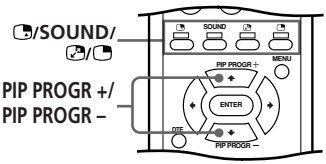


Select	To
“ON”	view the picture in wide-mode (16:9).
“OFF”	cancel wide-mode (16:9).

■ Watching Picture-in-Picture (PIP)

▶ KV-AR34M64/AR29M64 only

With the PIP feature, you can display two different TV programs or video input at the same time by using the ◔ button.



To	Press
Display a sub screen	◔. To cancel the sub screen, press the button again.
Change a program number in the sub screen	PIP PROGR + or PIP PROGR –.
Select a video input in the sub screen	◔.
Swap pictures between the main and sub screens	◔.
Swap sound between the main and sub screens A "♪" symbol will appear next to the program number or video input display to indicate which screen you are hearing.	SOUND.

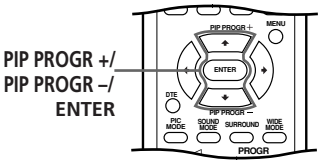
Note

- The picture and sound from the ⇨ (monitor output) terminals will always be from the main screen, even when you select the sub screen sound by pressing SOUND (see page 30).

■ Selecting a TV program using PIP

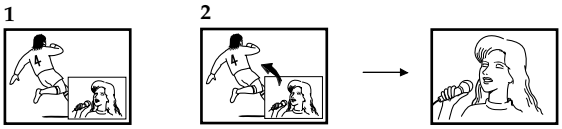
▶ KV-AR34M64/AR29M64 only

You can select your desired TV program directly from the PIP sub screen by using PIP PROGR +/– buttons.



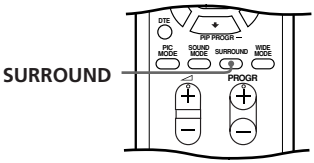
1 Press PIP PROGR +/– until the desired program appears in the sub screen.

2 Press ENTER to change the sub screen program to the main screen.



■ Listening with surround sound

You can use the SURROUND button to listen to the sound effects of a concert hall or movie theater.



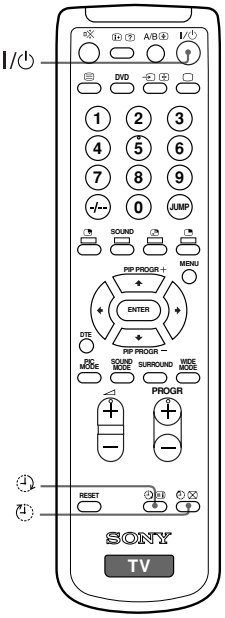
Select	To
"TruSurround"	listen to the surround sound that spreads out to the rear of a room.
"SIMULATED"	listen to monaural sound with a stereo-like effect.
"OFF"	cancel surround sound.

The surround of your TV is categorized as TruSurround.

TruSurround™ is a trademark of SRS Labs, Inc. SRS and the SRS symbol are registered trademarks of SRS Labs, Inc. in the United States and selected foreign countries. SRS and TruSurround are incorporated under license from SRS Labs, Inc. and are protected under United States Patent Nos. 4,748,669 and 4,841,572 with numerous additional issued and pending foreign patents.

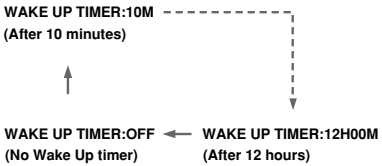
■ Setting the timers

You can set your TV to turn on and off automatically by using the WAKE UP and SLEEP timers respectively.



Setting the Wake Up timer

1 Press 🕘 until the desired period of time appears on the screen.



The Wake Up timer starts immediately after you have set it.

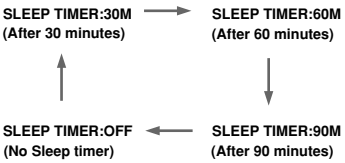
2 Select the program number or video input you want to wake up to.

3 Press I/⏻, or set the Sleep timer if you want the TV to turn off automatically.

The 🕘 indicator on the TV lights up orange when the TV goes into standby mode.

Setting the Sleep timer

Press 🕘 until the desired period of time appears on the screen.



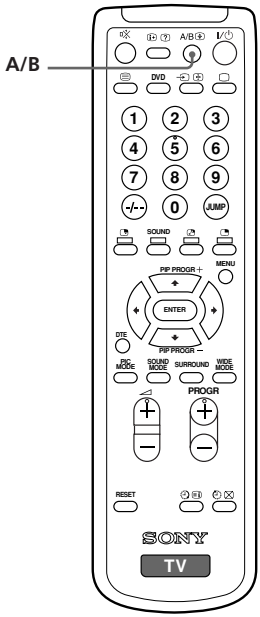
The Sleep timer starts immediately after you have set it.

Notes

- You can also cancel the Wake Up and Sleep timers by pressing ⏻ on the TV to turn off the TV.
- If no buttons are pressed for more than two hours after the TV is turned on using the Wake Up timer, the TV automatically goes into standby mode.

■ Enjoying stereo or bilingual programs

You can enjoy stereo sound or bilingual programs of NICAM and A2 stereo systems by using the A/B button.



When receiving a NICAM program

Broadcasting	On-screen display (Selected sound)
NICAM stereo	NICAM (Stereo sound) → MONO (Regular sound)
NICAM bilingual	NICAM MAIN (Main sound) → NICAM SUB (Sub sound) → MONO (Regular sound)
NICAM monaural	NICAM MAIN (Main sound) → MONO (Regular sound)

When receiving an A2 program

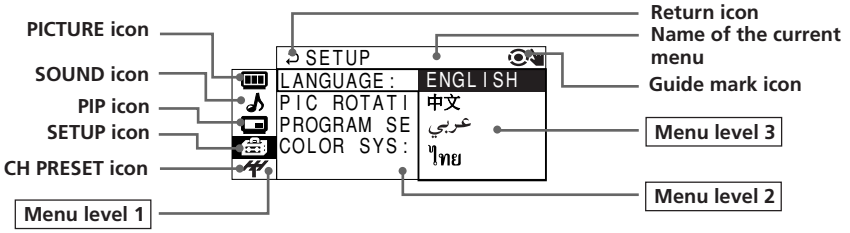
Broadcasting	On-screen display (Selected sound)
A2 stereo	STEREO (Stereo sound) → MONO (Regular sound)
A2 bilingual	MAIN (Main sound) → SUB (Sub sound)

Notes

- If the stereo sound is noisy when receiving a stereo program, select "MONO". The sound becomes monaural, but the noise is reduced.
- If the sound is distorted when receiving a monaural program through ⅂⌜ (antenna input), press A/B repeatedly until "MONO" appears on the screen. To cancel the monaural sound setting, press A/B again until "AUTO" appears on the screen.
- Your TV can only receive monoural sound when you select the PIP sub screen sound by pressing SOUND (see page 13).

■ Introducing the menu system

The MENU button lets you open a menu and change the settings of your TV. The following is an overview of the menu system.



Level 1	Level 2	Level 3/Function	Page
"PICTURE"	"PICTURE MODE"	Select the picture mode: "DYNAMIC" → "STANDARD" → "SOFT" → "PERSONAL" → "ADJUST"	20
	"ADJUST"	Adjust the "PERSONAL" option: "PICTURE" → "COLOR" → "BRIGHT" → "HUE" → "SHARP"	
	"DTE"	Optimize the picture contrast: "ON" → "OFF"	
	"WIDE MODE"	Change the picture size: "ON" → "OFF"	
	"GAME MODE"	Adjust the picture settings for video games: "ON" → "OFF"	
"SOUND"	"SOUND MODE"	Select the sound mode: "DYNAMIC" → "DRAMA" → "SOFT" → "PERSONAL" → "ADJUST"	22
	"ADJUST"	Adjust the "PERSONAL" option: "BASS" → "TREBLE" → "BALANCE" → "BBE"*	
	"SURROUND"	Select the "SURROUND" mode: "TruSurround" → "SIMULATED" →"OFF"	
	"INTELLIGENT VOL"	Adjust volume automatically: "ON" → "OFF"	
"PIP"	"POSITION"	Change the position of the sub screen.	24
	"PIP"	Display a sub screen within the main picture: "ON" → "OFF"	
(KV-AR34M64/ AR29M64 only)	"SWAP"	Exchange pictures between main screen and sub screen.	

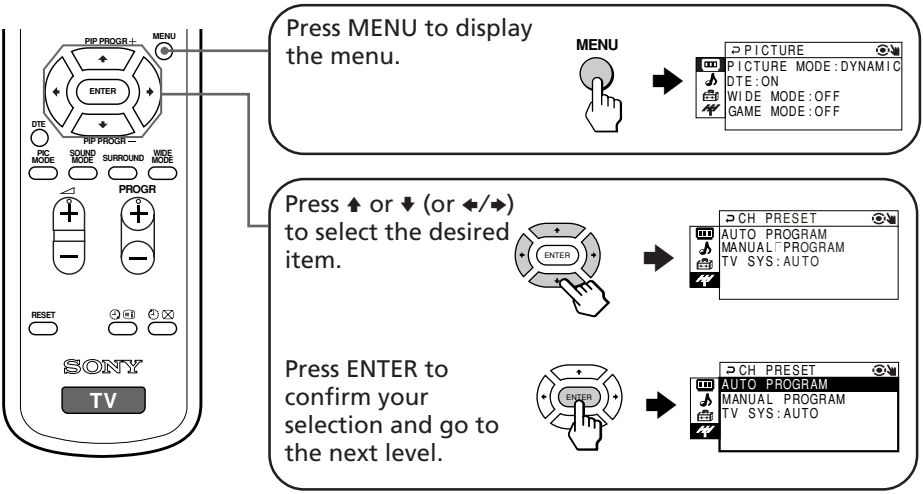
continue

continued

Level 1	Level 2	Level 3/Function	Page
"SETUP"	"LANGUAGE"	Change the menu language: "ENGLISH" → "中文"(Chinese) → "عربي"(Arabic) → "ไทย"(Thai)	25
	"PIC ROTATION"	Adjust the picture position.	
	"PROGRAM SETUP"	Adjust each program number settings.	
	"COLOR SYS"	Select the color system: "AUTO" →" PAL" → "SECAM" → "NTSC3.58" → "NTSC4.43"	
"CH PRESET"	"AUTO PROGRAM"	Preset channels automatically.	27
	"MANUAL PROGRAM"	Preset channels manually.	
	"TV SYS"	Select the TV system: "B/G" → "I" → "D/K" → "M"	

* The BBE is manufactured by Sony Corporation under license from BBE Sound, Inc. It is covered by U.S. Patent No. 4,638,258 and No. 4,482,866. The word "BBE" and the BBE symbol are the trademarks of BBE Sound, Inc.

How to use the menu



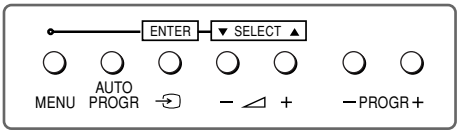
Other menu operations

To	Press
Adjust the setting value	↑, ↓, ← or →.
Move to the next/previous menu level	← or →.
Cancel the menu	MENU.

Tips

- If you want to exit from Menu level 2 to Menu level 1, press ↑ or ↓ until the return icon (⮌) is highlighted, then press ENTER.
- Some of the menu items can be operated directly using the remote buttons.
- The MENU, ENTER, and SELECT ▼/▲ buttons on the TV can also be used for the operations above.

Front of TV

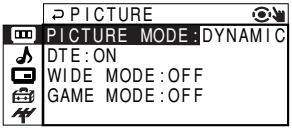


■ Changing the “PICTURE” setting

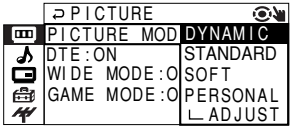
The “PICTURE” menu allows you to adjust the picture settings.

1 Press MENU.

2 Make sure the “PICTURE” icon ( ) is selected, then press ENTER.



3 Press ↑ or ↓ to select the desired item (e.g., “PICTURE MODE”), then press ENTER.



Select	To
“PICTURE MODE”	choose either “DYNAMIC”, “STANDARD”, “SOFT”, “PERSONAL”*, or “ADJUST” (see page 11).
“DTE”	optimize the picture contrast. Press ↑ or ↓ to select “ON”, then press ENTER. To cancel, select “OFF”, then press ENTER.
“WIDE MODE”	choose either “ON” or “OFF” (see page 12).
“GAME MODE”	adjust the picture setting that is suitable to view video games. Press ↑ or ↓ to select “ON”, then press ENTER. To cancel, select “OFF”, then press ENTER.

* When the “PERSONAL” mode is selected, you can receive the last adjusted picture settings from the “ADJUST” option (see page 21).

Notes

- “GAME MODE” is available only when receiving signals through (video input), (S video input), or (component video input).
- The DTE mode is not selectable when “GAME MODE” is turned “ON”.

Adjusting the “ADJUST” items under “PICTURE MODE”

1 Press ↑ or ↓ to select the desired item (e.g.,“COLOR”), then press ENTER.

2 Adjust the value according to the following table, then press ENTER.

For	Press ↓ or ← to	Press ↑ or → to
“PICTURE”	decrease picture contrast.	increase picture contrast.
“COLOR”	decrease color intensity.	increase color intensity.
“BRIGHT”	darken the picture.	brighten the picture.
“HUE”	increase red picture tones.	increase green picture tones.
“SHARP”	soften the picture.	sharpen the picture.

3 Repeat the above steps to adjust other items.

The adjusted settings will be received when you select “PERSONAL”.

Notes

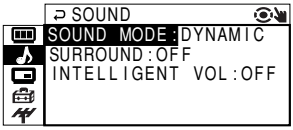
- “HUE” can be adjusted for the NTSC color system only.
- Reducing sharpness (“SHARP”) can also reduce picture noise.

■ Changing the “SOUND” setting

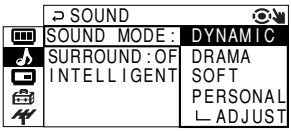
The “SOUND” menu allows you to adjust the sound settings.

1 Press MENU.

2 Press ↑ or ↓ to select the “SOUND” icon (♪), then press ENTER.



3 Press ↑ or ↓ to select the desired item (e.g., “SOUND MODE”), then press ENTER.

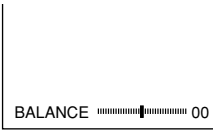


Select	To
“SOUND MODE”	choose either “DYNAMIC”, “DRAMA”, “SOFT”, “PERSONAL”*, or “ADJUST” (see page 11).
“SURROUND”	choose either “TruSurround”, “SIMULATED” or “OFF” (see page 14).
“INTELLIGENT VOL”	adjust the volume of all program numbers and video inputs automatically. Press ↑ or ↓ to select “ON”, then press ENTER. To cancel, select “OFF”, then press ENTER.

* When the “PERSONAL” mode is selected, you can receive the last adjusted sound settings from the “ADJUST” option (see page 23).

Adjusting the "ADJUST" items under "SOUND MODE"

1 Press ↑ or ↓ to select the desired item (e.g., "BALANCE"), then press ENTER.



2 Adjust the value according to the following table, then press ENTER .

For	Press ↓ or ← to	Press ↑ or → to
"BASS"	decrease the bass.	increase the bass.
"TREBLE"	decrease the treble.	increase the treble.
"BALANCE"	increase the left speaker's volume.	increase the right speaker's volume.
"BBE"	select "HIGH" for higher enhancement of sound clarity; select "LOW" for lower enhancement of sound clarity; select "OFF" to cancel BBE sound.	

3 Repeat the above steps to adjust other items.

The adjusted settings will be received when you select "PERSONAL".

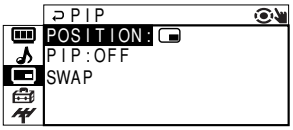
■ Changing the Picture-in-Picture ("PIP") setting

▶ KV-AR34M64/AR29M64 only

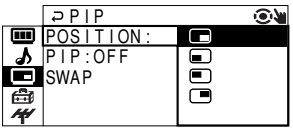
The "PIP" menu allows you to display a sub screen, change the sub screen position and exchange pictures between the main and sub screens.

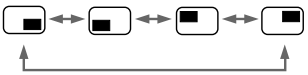
1 Press MENU.

2 Press ↑ or ↓ to select the "PIP" icon (), then press ENTER.



3 Press ↑ or ↓ to select the desired item (e.g., "POSITION"), then press ENTER.



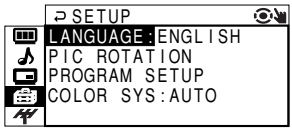
Select	To
"POSITION"	change the position of the sub screen. Press ↑ or ↓ to select the desired position, then press ENTER . 
"PIP"	display a sub screen. Press ↑ or ↓ to select "ON", then press ENTER . To cancel, press or select "OFF", then press ENTER .
"SWAP"	exchange pictures between the main screen and sub screen.

■ Changing the “SETUP” setting

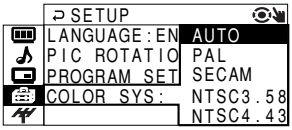
The “SETUP” menu allows you to change the menu language, adjust the picture position, set up your program numbers and select the color system.

1 Press MENU.

2 Press ↑ or ↓ to select the “SETUP” icon (🧰), then press ENTER.



3 Press ↑ or ↓ to select the desired item (e.g., “COLOR SYS”), then press ENTER.



Select	To
“LANGUAGE”	change the menu language. Press ↑ or ↓ to select either “ENGLISH”, “中文” (Chinese), “ عربي ” (Arabic), or “ ไทย ” (Thai), then press ENTER. The selected menu language appears.
“PIC ROTATION”	adjust the picture position when it is not aligned with the TV screen. Press ↑ , → , ↓ or ← to adjust the picture position, then press ENTER.
“PROGRAM SETUP”	adjust each channel settings (see **Adjusting each program number settings (“PROGRAM SETUP”)** on page 26).
“COLOR SYS”	select the color system. Normally, set this to “AUTO”.

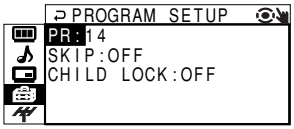
continue

continued

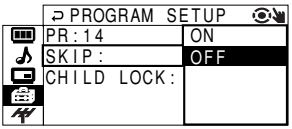
Adjusting each program number settings (“PROGRAM SETUP”)

1 Select “PROGRAM SETUP” from the “SETUP” menu.

2 Select “PR” and press ENTER. Press ↑ or ↓ to select the desired program number you want to adjust, then press ENTER.



3 Press ↑ or ↓ to select the desired item (e.g., “SKIP”), then press ENTER.



Select	To
“PR”	select the desired program number.
“SKIP”	skip unwanted or unused program number. Press ↑ or ↓ to select “ON”, then press ENTER. To cancel, select “OFF”, then press ENTER.
“CHILD LOCK”	prevent children from watching this selected program number. Press ↑ or ↓ to select “ON”, then press ENTER. The lock symbol (🔒) appears on the screen. To cancel, select “OFF”, then press ENTER. If you preset a locked program number, that program number will be unlocked automatically.

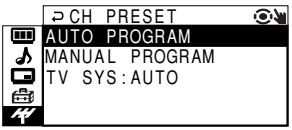
4 To continue adjusting other program numbers, press ↑ or ↓ to select “PR”, then repeat step 2 and 3.

■ Changing the Channel Preset (“CH PRESET”) setting

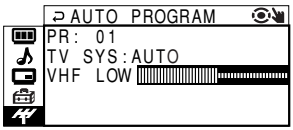
The “CH PRESET” menu allows you to preset channels automatically, manually preset channels and select the TV system.

1 Press MENU.

2 Press ↑ or ↓ to select the “CH PRESET” icon (), then press ENTER.



3 Press ↑ or ↓ to select the desired item (e.g., “AUTO PROGRAM”), then press ENTER.



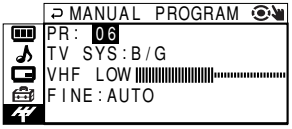
Select	To
“AUTO PROGRAM”	preset channels automatically.
“MANUAL PROGRAM”	manually preset desired channels and channels that cannot be preset automatically (see **Presetting channels manually** on page 28).
“TV SYS”	select the TV system. Press ↑ or ↓ to select either “B/G”, “I”, “D/K” or “M”, then press ENTER.

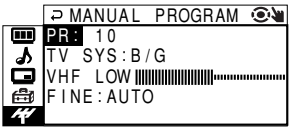
Presetting channels manually

1 After selecting "MANUAL PROGRAM", select the program number to which you want to preset a channel.

(1) Make sure "PR" is selected, then press ENTER.

(2) Press ↑ or ↓ until the program number you want to preset (e.g., program number "10") appears on the menu, then press ENTER.

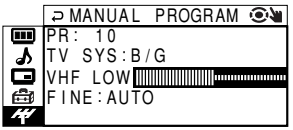


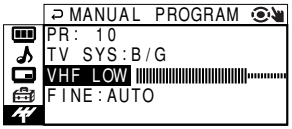


2 Select the desired channel.

(1) Make sure either "VHF LOW", "VHF HIGH", or "UHF" is selected, then press ENTER.

(2) Press ↑ or ↓ until the desired channel's broadcast appears on the TV screen, then press ENTER.

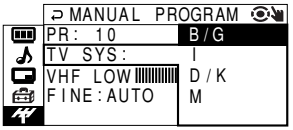


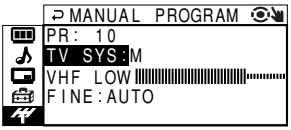


3 If the sound of the desired channel is abnormal, select the appropriate TV system.

(1) Press ↑ or ↓ to select "TV SYS", then press ENTER.

(2) Press ↑ or ↓ until the sound becomes normal, then press ENTER.



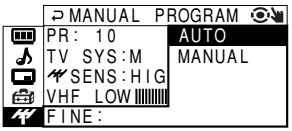


Tip

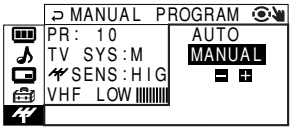
- You can also select the program number with the PROGR +/– or number buttons.

4 If you are not satisfied with the picture and sound quality, you may be able to improve them by using the "FINE" tuning feature.

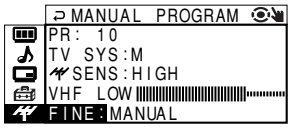
(1) Press ↑ or ↓ to select "FINE", then press ENTER.



(2) Press ↑ or ↓ to select "MANUAL", then press ENTER.

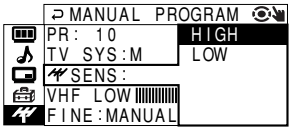


(3) Press ↑, ↓, ← or → until the picture and sound quality are optimal, then press ENTER.
The + or – icon on the menu flashes while tuning.

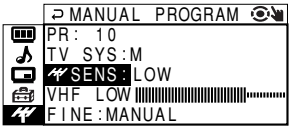


5 If the TV signal is too strong and the picture is distorted, you can adjust the TV reception sensitivity.

(1) Press ↑ or ↓ to select "SENS", then press ENTER.



(2) Press ↑ or ↓ to select "LOW", then press ENTER.

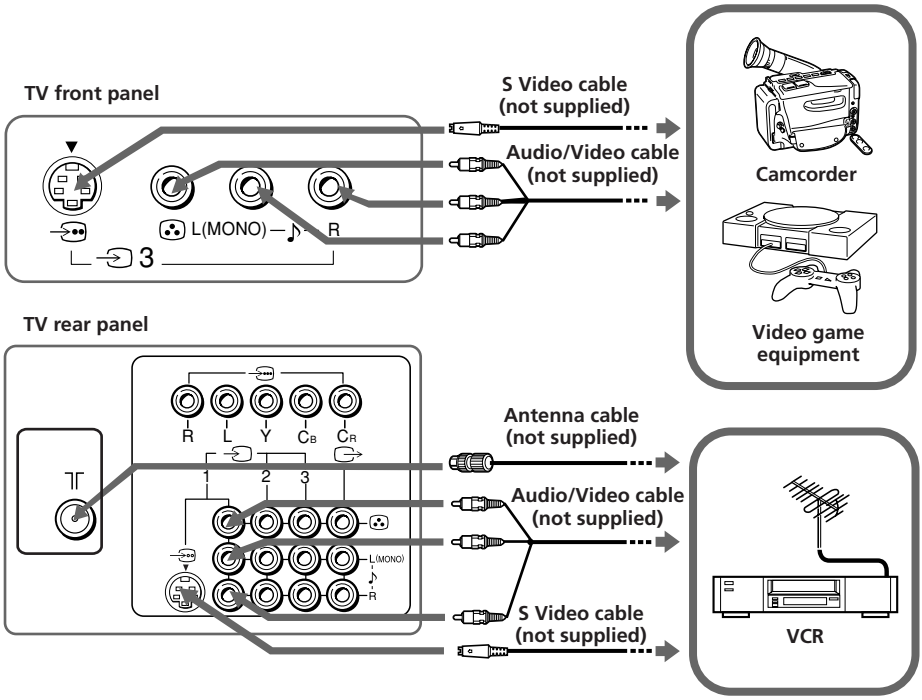


Notes

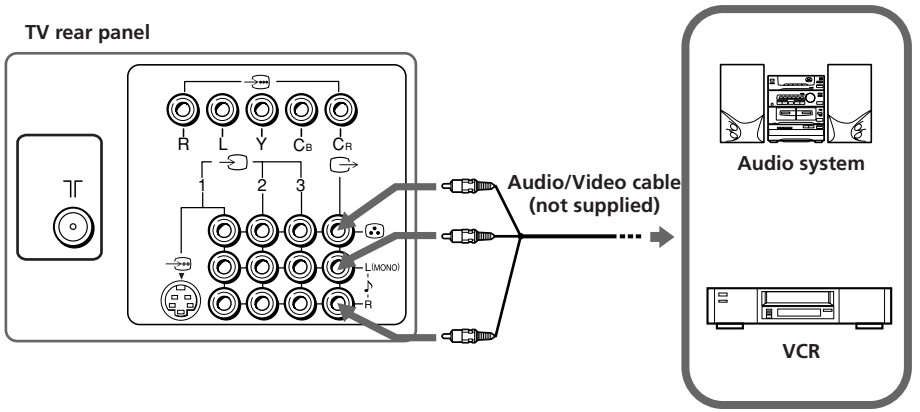
- If you connect a VCR to ⅂ (antenna input), preset the signal output from the VCR to the program number 0 on the TV.
- "SENS" is available for KV-AR34M64/AR29M64 only.

■ Connecting optional components

Connecting to the video input terminal ( )



Connecting to the monitor output terminal ( )

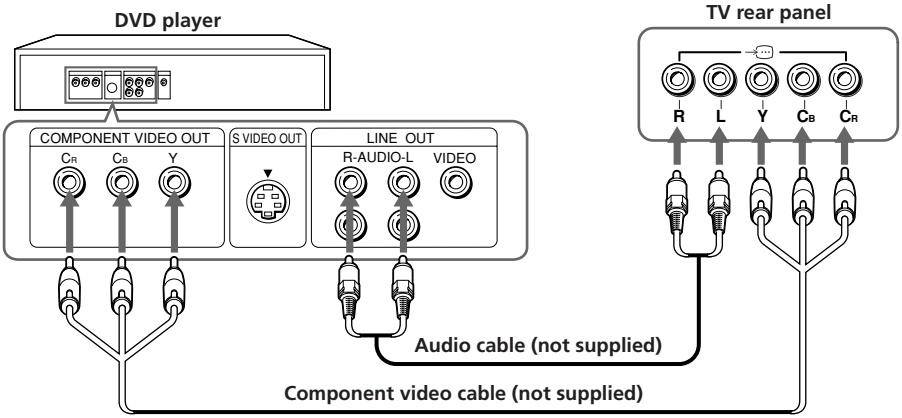


Connecting a DVD player to the component video input terminal ( )

1 Using an audio cable, connect R and L under (component video input) on your TV to the LINE OUT, AUDIO R and L output connectors on your DVD player.

2 Using a component video cable, connect Y, C_B, and C_R under (component video input) on your TV to the COMPONENT VIDEO OUT Y, C_B, and C_R output connectors on your DVD player.

3 Press DVD on the remote to watch the (component video input) and "DVD" will appear on your screen.



Notes

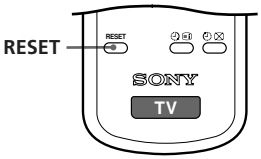
- If your DVD player can ouput interlace and progressive mode signals, select the interlace output when connecting to (component video input) on your TV. Your TV can receive either 525i/60Hz or 625i/50Hz interlace signals.
- Some DVD player terminals may be labeled differently:

Connect	To (on the DVD player)
Y (green)	Y
C_B (blue)	C_B, P_B, C_b or B-Y
C_R (red)	C_R, P_R, C_r or R-Y

- When both (S video) and (video) for 1 or 3 are connected at the same time, (S video) is automatically selected. To view (video), disconnect the S video cable.
- If you select "DVD" on your TV screen, the signal from the (monitor output) jacks will not be output properly. This does not indicate a malfunction.

■ Troubleshooting

If you have any problem while viewing your TV, you can either use the Reset function or check the Troubleshooting guide below. If the problem persists, contact your Sony dealer.

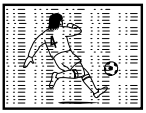


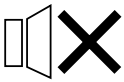
Reset function

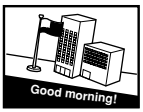
Press the RESET button on your remote control. Your TV will go blank for about half a second then the picture will reappear with "RESET" displayed on your TV screen for about 10 seconds.

Pressing RESET will set your TV to the factory setting, but certain problems may be solved.

Troubleshooting guide

Symptom	Possible cause	Solutions	Page
Snowy picture  **Noisy sound**	• The connection is loose or the cable is damaged.	• Check the antenna cable and connection on the TV, VCR and at the wall.	30
	• The antenna setup is inappropriate.	• Check the antenna setup. Contact a Sony dealer for advice.	–
	• Channel presetting is inappropriate or incomplete.	• Display the "CH PRESET" menu and select "MANUAL PROGRAM" to preset the channel again.	28
	• Signal transmission is low.	• Try using a booster.	–
Distorted picture **Noisy sound**	• Broadcast signals are too strong.	• Display the "CH PRESET" menu and select "MANUAL PROGRAM". Then, select "SENS: LOW". (KV-AR34M64/AR29M64 only)	29
		• Turn off or disconnect the booster if it is in use.	–
Good picture **Noisy sound**	• The TV system setting is inappropriate.	• Display the "CH PRESET" menu and select the appropriate TV system ("TV SYS").	28
	• PIP sound is selected when PIP is displayed.	• Press SOUND or . (KV-AR34M64/AR29M64 only)	13

Symptom	Possible cause	Solutions	Page
No picture **No sound** 	• The power cord, antenna or VCR is not connected.	• Check the power cord, antenna and VCR connections.	30
	• The TV is not turned on.	• Press I/⏻ (power). • Press ⏻ (main power) on the TV to turn off the TV for about five seconds, then turn it on again.	9 8
Good picture **No sound** 	• The volume level is too low.	• Press + to increase the volume level.	9
	• The sound is muted. • PIP sound is selected when PIP is displayed.	• Press to cancel the muting. • Press SOUND or . (KV-AR34M64/AR29M64 only)	9 13
Dotted lines or stripes 	• There is local interference from cars, neon signs, hair dryers, power generators, etc.	• Do not use a hair dryer or other equipment near the TV. • Check the antenna setup. Contact a Sony dealer for advice.	– –
Double images or "ghosts" 	• Broadcast signals are reflected by nearby mountains or buildings.	• Use a highly directional antenna. • Use the fine tuning ("FINE") function.	– 29
	• The antenna setup is inappropriate.	• Check the antenna setup. Contact a Sony dealer for advice.	–
	• Use of a booster is inappropriate.	• Turn off or disconnect the booster if it is in use.	–
No color 	• The color level setting is too low.	• Display the "PICTURE" menu and select "ADJUST" of "PICTURE MODE", then adjust the "COLOR" level.	21
	• The color system setting is inappropriate.	• Display the "SETUP" menu and check the color system ("COLOR SYS") setting (usually set this to "AUTO").	25
	• The antenna setup is inappropriate.	• Check the antenna setup. Contact a Sony dealer for advice.	–

Symptom	Possible cause	Solutions	Page
Picture slant 	• The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV.	• Keep external speakers or other electrical equipment away from the TV. • Display the "SETUP" menu and adjust "PIC ROTATION" so that the picture position is optimal.	– 25
Abnormal color patches 	• The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV.	• Keep external speakers or other equipment away from the TV. Do not move the TV while the TV is turned on. Press ⏻ (main power) on the TV to turn off the TV for about 15 minutes, then turn it on again to demagnetize the TV.	–
TV cannot receive stereo broadcast sound.	• The stereo reception setting is inappropriate.	• Press A/B until "AUTO" appears on the screen.	16
or	• The connection is loose or the cable is damaged.	• Check the antenna cable and connection on the TV, VCR and on the wall.	30
Stereo broadcast sound switches on and off or is distorted.	• The antenna setup is inappropriate.	• Check the antenna setup. Contact a Sony dealer for advice.	–
The ⏻ (standby) indicator on your TV flashes red several times after every three seconds.	• Your TV's self-diagnosis function indicates the possible problems.	• Count the number of times the ⏻ (standby) indicator flashes. Press ⏻ (main power) to turn off your TV. Contact your nearest Sony service center.	–
Cannot play shooting games.	• Some shooting games which involve pointing a light beam at the TV screen with an electronic gun or rifle cannot be used with your TV. For details, see the instruction manual supplied with the video game software.	—	–
TV cabinet creaks.	• Changes in room temperature sometimes make the TV cabinet expand or contract, causing a noise. This does not indicate a malfunction.	—	–
A small "boom" sound is heard when the TV is turned on.	• The TV's demagnetizing function is working. This does not indicate a malfunction.	—	–

■ Specifications

	KV-AR34M64	KV-AR29M68 KV-AR29M64	KV-AR25M68	Note
Power requirements	220 – 240 V AC, 50/60 Hz			
Power consumption (W)	Indicated on the rear of the TV			
Television system	B/G, I, D/K, M			
Color system	PAL, PAL 60, SECAM, NTSC3.58, NTSC4.43			
Stereo/Bilingual system	NICAM Stereo/Bilingual B/G, I; A2 Stereo/Bilingual B/G			
Channel coverage				
B/G	VHF : E2 to E12 UHF : E21 to E69 CATV : S01 to S03, S1 to S41			
I	UHF : B21 to B68 CATV : S01 to S03, S1 to S41			
D/K	VHF : C1 to C12, R1 to R12 UHF : C13 to C57, R21 to R60 CATV : S01 to S03, S1 to S41, Z1 to Z39			
M	VHF : A2 to A13 UHF : A14 to A79 CATV : A-8 to A-2, A to W+4, W+6 to W+84			
(Antenna)	75-ohm external terminal			
Audio output (Speaker)	8W + 8W			
Number of terminal				
(Video)	Input: 4* Output: 1	Phono jacks; 1 Vp-p, 75 ohms		* Three input lines available
(Audio)	Input: 4* Output: 1	Phono jacks; 500 mVrms		* Three input lines available
(S Video)	Input: 2	Y: 1 Vp-p, 75 ohms, unbalanced, sync negative C: 0.286 Vp-p, 75 ohms		
(Component Video)	Input: 1	Phono jacks; Y: 1 Vp-p, 75 ohms, sync negative C_B: 0.7 Vp-p, 75 ohms C_R 0.7 Vp-p, 75 ohms Audio: 500 mVrms		
(Headphone)	Output: 1	Stereo minijack		
Picture tube	34 in.	29 in.	25 in.	
Tube size (cm)	86	72	64	Measured diagonally
Screen size (cm)	80	68	60	Measured diagonally
Dimensions (w/h/d, mm)	896 × 686 × 569	765 × 578 × 502	650 × 517 × 496	
Mass (kg)	79	49	39	

Design and specifications are subject to change without notice.

Sony Thai Co., Ltd.
2126 Kromadit Building, New Petchburi Road,
Bangkapi, Huaykwang, Bangkok 10320

http://www.sony.net/

Sony Corporation

SONY

4-089-690-**11** (1)

Trinitron Color TV

Operating Instructions — GB

- Before operating the unit, please read this manual thoroughly and retain it for future reference.

使用說明書 — CT

- 使用本電視機之前請先詳細閱讀此手冊，並妥善保存以備日後用作參考。

使用说明书 — CS

- 使用本电视机之前请详细阅读此手册，并妥善保存以备日后用作参考。

FD Trinitron

WEGA

KV-AR25

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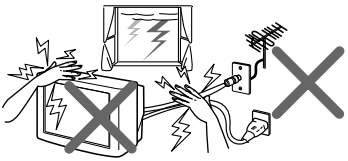
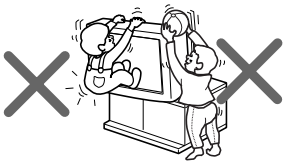
M90

WARNING

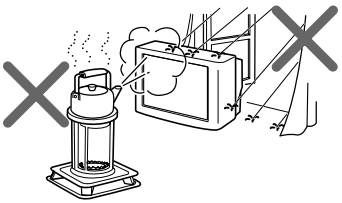
- Dangerously high voltages are present inside the TV.
- TV operating voltage: 220-240 V AC.
- Do not plug in the power cord until you have completed making all other connections; otherwise a minimum leakage current might flow through the antenna and other terminals to ground.
- To avoid battery leakage and damage to the remote, remove the batteries from the remote if you are not going to use it for several days. If any liquid leaks from the batteries and touches your skin, immediately wash it away with water.



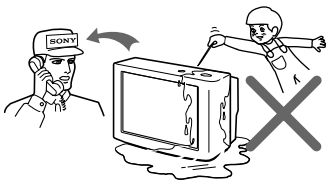
For your own safety, do not touch any part of the TV, the power cord and the antenna cable during lightning storms.



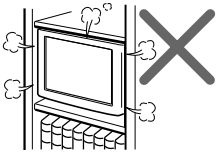
For children's safety, do not leave children alone with the TV. Do not allow children to climb onto it.



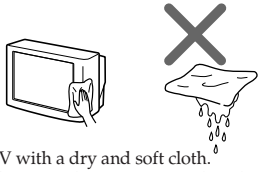
To prevent fire or shock hazard, do not expose the TV to rain or moisture.



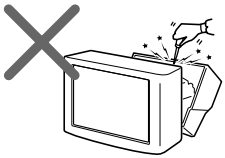
Do not operate the TV if any liquid or solid object falls into it. Have it checked immediately by qualified personnel only.



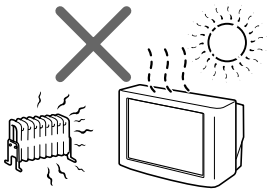
Do not block the ventilation openings of the TV.
Do not install the TV in a confined space, such as a bookcase or built-in cabinet.



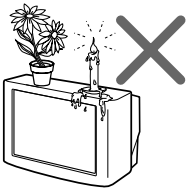
Clean the TV with a dry and soft cloth.
Do not use benzine, thinner, or any other chemicals to clean the TV. Do not attach anything (e. g., adhesive tape, cellophane tape, glue) on the painted cabinet of the TV. Do not scratch the picture tube.



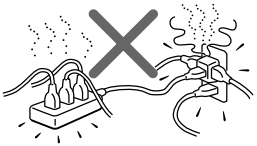
Do not open the cabinet and the rear cover of the TV as high voltages and other hazards are present inside the TV. Refer servicing and disposal of the TV to qualified personnel.



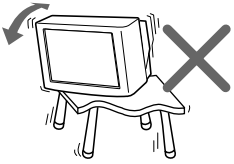
Your TV is recommended for home use only.
Do not use the TV in any vehicle or where it may be subject to excessive dust, heat, moisture or vibrations.



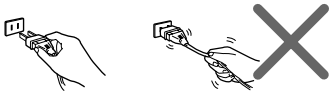
Do not place any objects on the TV.



Do not plug in too many appliances to the same power socket. Do not damage the power cord.



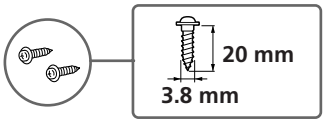
Install the TV on a stable TV stand and floor which can support the TV set weight. Ensure that the TV stand surface is flat and its area is larger than the bottom area of the TV.



Pull the power cord out by the plug. Do not pull the power cord itself. Even if your TV is turned off, it is still connected to the AC power source (mains) as long as the power cord is plugged in. Unplug the TV before moving it or if you are not going to use it for several days.

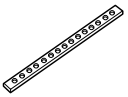
■ Securing the TV

To prevent the TV from falling, use the supplied screws, clamps and band to secure the TV.

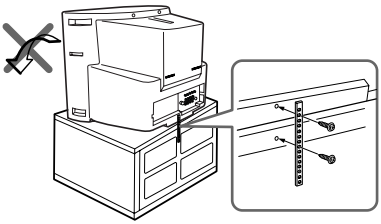


screws

clamps

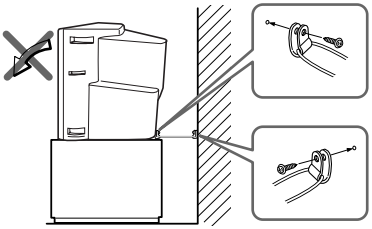


band



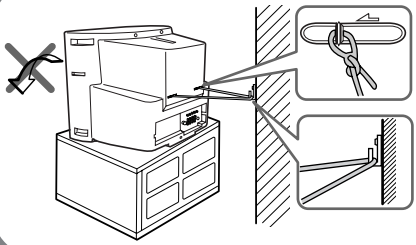
Screw the band to the TV stand and to the provided hole at the rear of your TV.

or



(1) Put a cord or chain through the clamps.
(2) Screw one clamp to a wall or pillar and the other clamp to the provided hole at the rear of your TV.

or



(1) Attach each end of a cord or chain to the provided holders at the rear of your TV.
(2) Securely fix the attached cord or chain to a wall or pillar using an attachment which can support the TV set weight.

Note

- Use only the supplied screws. Use of other screws may damage the TV.

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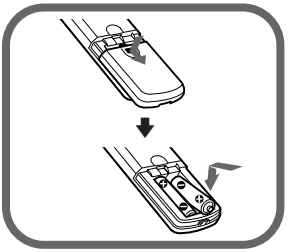
GB

■ Getting Started

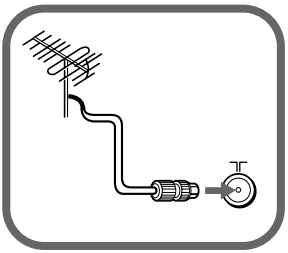


Step 1

Insert the batteries (supplied) into the remote.

Note

- Do not use old or different types of batteries together.

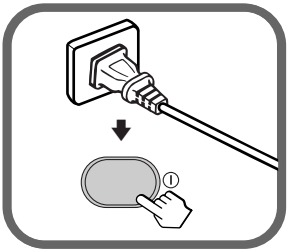


Step 2

Connect the antenna cable (not supplied) to ⅂⊢ (antenna input) at the rear of the TV.

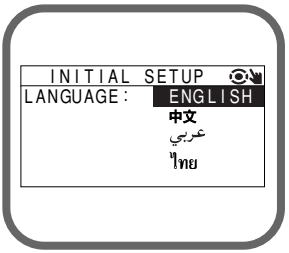
Tip

- You can also connect your TV to other optional components (see page 27).



Step 3

Plug in the power cord, then press ⏻ on the TV to turn it on.

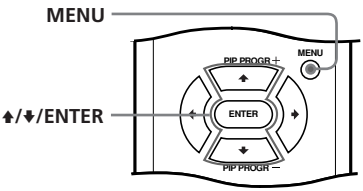


Step 4

Set up the TV by following the instructions of the "INITIAL SETUP"menu (see page 7).

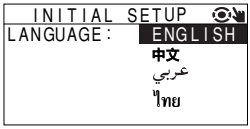
■ Setting up your TV ("INITIAL SETUP")

When you turn on your TV for the first time, the "INITIAL SETUP" menu will appear. This menu allows you to change the menu language, adjust the picture position and preset the TV channels automatically.



1 Press ↑ or ↓ to select the desired menu language (e.g.,"ENGLISH"), then press ENTER.

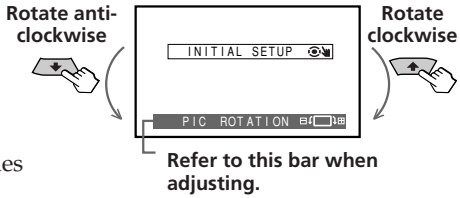
The selected menu language appears.



2 If the "PIC ROTATION" bar is slanted, press ↑ or ↓ to adjust it, then press ENTER.

If no adjustment is necessary, then press ENTER.

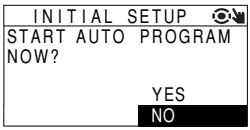
The ⊞ or ⊟ icon on the screen flashes while adjusting.

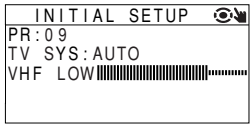


3 Press ↑ or ↓ to select "YES", then press ENTER to preset the channels automatically (see page 24).

The screen will indicate automatic presetting is in progress.

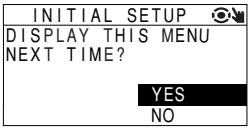
To skip automatic channel presetting, select "NO", then press ENTER.





4 Press ↑ or ↓ to select "NO", then press ENTER. The "INITIAL SETUP" menu will not appear again the next time you turn on the TV by pressing ⏻.

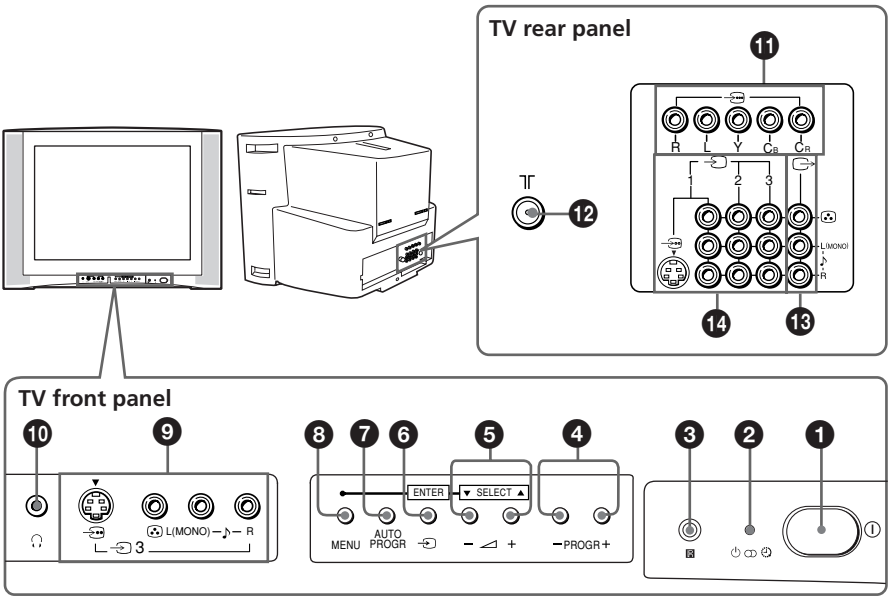
To allow this menu to appear again, select "YES", then press ENTER.



Tips

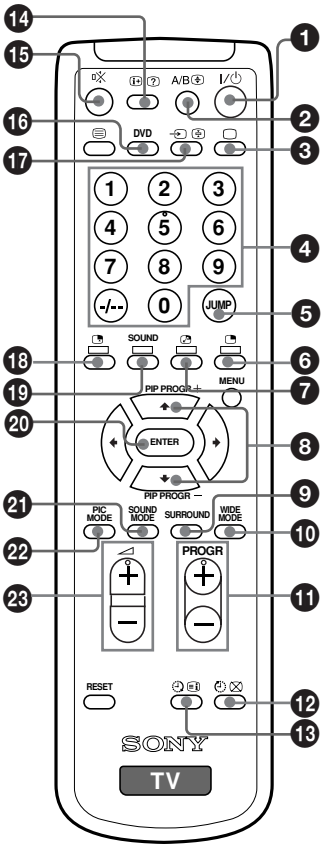
- You can immediately go to the end of the "INITIAL SETUP" menu by pressing MENU.
- You can also set up your TV using the menu system (see page 15).

■ TV front and rear panels



Button/Terminal	Function	Page
❶ ⏻	Turn off or turn on the TV.	6
❷ ⏻	Standby indicator.	–
❷ ⧉	Stereo/bilingual indicator.	13
❷ 🕘	Wake Up indicator.	14
❸	Remote control sensor.	–
❹ PROGR +/–	Select program number.	–
❺ ◿ +/–	Adjust volume.	–
❻ ⏎	Select TV or video input.	–
❼ AUTO PROGR	Preset channels automatically.	–
Menu operations		
❺ SELECT ▼/▲	Select and adjust items.	17
❻ ENTER	Confirm selected items.	17
❽ MENU	Display or cancel the menu.	17
❾ ⏎3	Video input terminal 3.	27
❿ 🎧	Headphone jack.	–
⓫ ⏎	Component video input terminal.	28
⓬ ⏄	Antenna input terminal.	27
⓭ ⏎	Monitor output terminal.	27
⓮ ⏎1, ⏎2, ⏎3	Video input terminal 1, 2, 3.	27

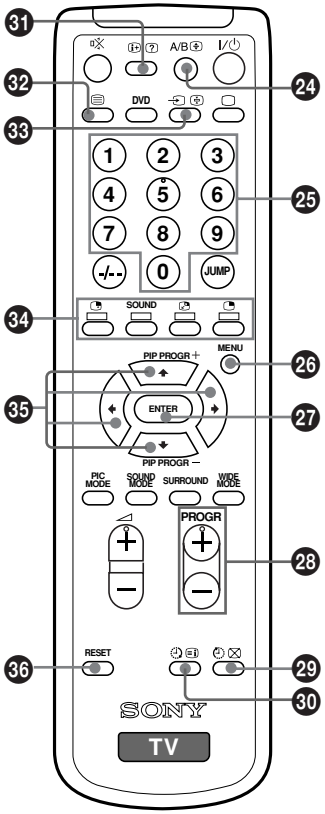
■ Remote control



Button	Function	Page
❶ I/⏻	Turn off temporarily or turn on the TV.	–
❸ ▭	Display the TV input.	–
❹ 0 – 9, -/--	Input numbers.	–
❺ JUMP	Jump to previous program number.	–
❾ SURROUND	Select surround mode.	12
❿ WIDE MODE	Select wide-mode (16:9).	12
⓫ PROGR +/–	Select program number.	–
⓮ i+	Display on-screen information.	–
⓯ 🔇	Mute the sound.	–
⓰ DVD	Select DVD input.	28
⓱ ⏎	Select TV or video input.	27
㉑ SOUND MODE	Select sound mode.	11
㉒ PIC MODE	Select picture mode.	11
㉓ ◿ +/–	Adjust volume.	–
Timer operations		
⓬ ⏲	Set TV to turn off automatically.	14
⓭ ⏲	Set TV to turn on automatically.	14
PIP operations (yellow label)		
❻ ◳	Not function for your TV.	–
❼ ♪		
❽ PIP PROGR + / PIP PROGR –		
⓲ ◳		
⓳ SOUND		
⓴ ENTER		
Stereo/bilingual operations		
❷ A/B	Select stereo/bilingual mode.	13

continue

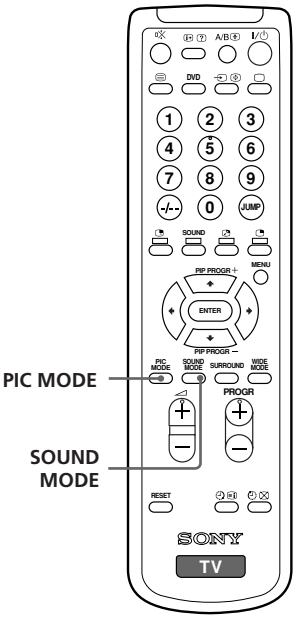
continued



Button	Function	Page
Menu operations		
26 MENU	Display or cancel the menu.	17
27 ENTER	Confirm selected items.	17
35 ↑, ↓, ←, →	Select and adjust items.	17
Teletext operations (green label)		
24 ⇳	Not function for your TV.	–
25 0 – 9		
28 PROGR +/–		
29 ⊠		
30 ⓘ		
31 ?		
32 ☰		
33 ⇳		
34 ▬ (red, green, yellow, blue)		
36 RESET	Set TV to factory setting.	29

Selecting the picture and sound modes

You can select picture and sound modes and adjust the setting to your preference in the “PERSONAL” option.



Selecting the picture mode

Press PIC MODE to select the desired picture mode.

Select	To
“DYNAMIC”	view high contrast pictures.
“STANDARD”	view normal pictures.
“SOFT”	view mild pictures.
“PERSONAL”	receive the last adjusted picture setting from the “ADJUST” option in the “PICTURE” menu (see page 19).

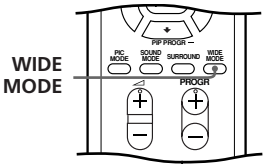
Selecting the sound mode

Press SOUND MODE to select the desired sound mode.

Select	To
“♪ DYNAMIC”	listen to dynamic and clear sound that emphasizes both the low and high tones.
“♪ DRAMA”	listen to sound that emphasizes voice and high tones.
“♪ SOFT”	listen to soft sound.
“♪ PERSONAL”	receive the last adjusted sound setting from the “ADJUST” option in the “SOUND” menu (see page 21).

Viewing the picture in wide mode

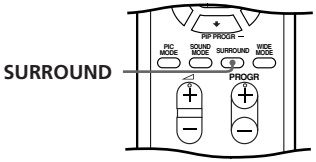
When receiving a wide-mode (16:9) signal, the picture will appear “squeezed” (compressed) on your screen. Use the WIDE MODE button to view the picture with the optimal effect.



Select	To
“ON”	view the picture in wide-mode (16:9).
“OFF”	cancel wide-mode (16:9).

Listening with surround sound

You can use the SURROUND button to listen to the sound effects of a concert hall or movie theater.



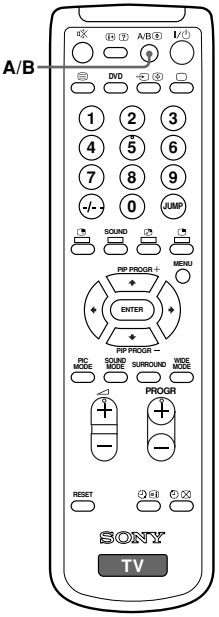
Select	To
“TruSurround”	listen to the surround sound that spreads out to the rear of a room.
“SIMULATED”	listen to monaural sound with a stereo-like effect.
“OFF”	cancel surround sound.

The surround of your TV is categorized as TruSurround.

TruSurround™ is a trademark of SRS Labs, Inc. SRS and the SRS symbol are registered trademarks of SRS Labs, Inc. in the United States and selected foreign countries. SRS and TruSurround are incorporated under license from SRS Labs, Inc. and are protected under United States Patent Nos. 4,748,669 and 4,841,572 with numerous additional issued and pending foreign patents.

■ Enjoying stereo or bilingual programs

You can enjoy stereo sound or bilingual programs of NICAM and A2 stereo systems by using the A/B button.



When receiving a NICAM program

Broadcasting	On-screen display (Selected sound)
NICAM stereo	NICAM (Stereo sound) → MONO (Regular sound)
NICAM bilingual	NICAM MAIN (Main sound) → NICAM SUB (Sub sound) → MONO (Regular sound)
NICAM monaural	NICAM MAIN (Main sound) → MONO (Regular sound)

When receiving an A2 program

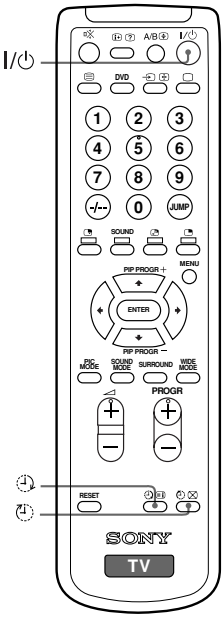
Broadcasting	On-screen display (Selected sound)
A2 stereo	STEREO (Stereo sound) → MONO (Regular sound)
A2 bilingual	MAIN (Main sound) → SUB (Sub sound)

Notes

- If the stereo sound is noisy when receiving a stereo program, select “MONO”. The sound becomes monaural, but the noise is reduced.
- Before receiving a NICAM stereo program in China, please check the NICAM broadcast condition in your area. When receiving a NICAM stereo program, the receiving conditions might vary depending on area. In addition, different strength of the NICAM broadcast signal might affect the receiving quality.
- If the sound is distorted when receiving a monaural program through ⅂Γ (antenna input), press A/B repeatedly until “MONO” appears on the screen. To cancel the monaural sound setting, press A/B again until “AUTO” appears on the screen.

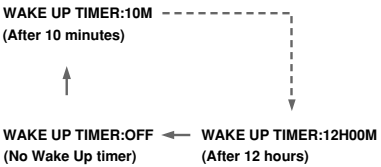
■ Setting the timers

You can set your TV to turn on and off automatically by using the WAKE UP and SLEEP timers respectively.



Setting the Wake Up timer

1 Press ⏲ until the desired period of time appears on the screen.



The Wake Up timer starts immediately after you have set it.

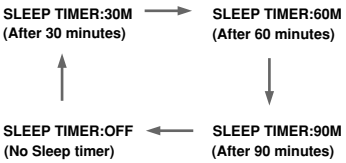
2 Select the program number or video input you want to wake up to.

3 Press I/⏻, or set the Sleep timer if you want the TV to turn off automatically.

The ⏲ indicator on the TV lights up orange when the TV goes into standby mode.

Setting the Sleep timer

Press ⏲ until the desired period of time appears on the screen.



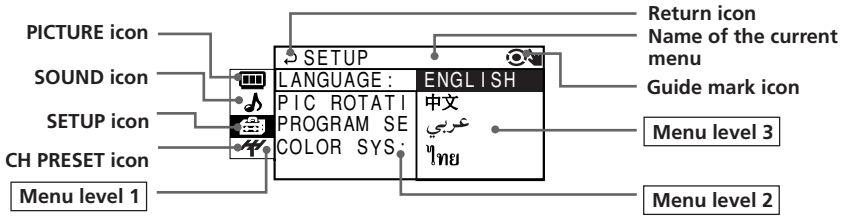
The Sleep timer starts immediately after you have set it.

Notes

- You can also cancel the Wake Up and Sleep timers by pressing ⏻ on the TV to turn off the TV.
- If no buttons are pressed for more than two hours after the TV is turned on using the Wake Up timer, the TV automatically goes into standby mode.

■ Introducing the menu system

The MENU button lets you open a menu and change the settings of your TV. The following is an overview of the menu system.



Level 1	Level 2	Level 3/Function	Page
"PICTURE"	"PICTURE MODE"	Select the picture mode: "DYNAMIC" → "STANDARD" → "SOFT" → "PERSONAL" → "ADJUST"	18
	"ADJUST"	Adjust the "PERSONAL" option: "PICTURE" → "COLOR" → "BRIGHT" → "HUE" → "SHARP"	
	"WIDE MODE"	Change the picture size: "ON" → "OFF"	
	"INTELLIGENT PIC"	Optimize picture quality: "ON" → "OFF"	
"SOUND"	"SOUND MODE"	Select the sound mode: "DYNAMIC" → "DRAMA" → "SOFT" → "PERSONAL" → "ADJUST"	20
	"ADJUST"	Adjust the "PERSONAL" option: "BASS" → "TREBLE" → "BALANCE" → "BBE"*	
	"SURROUND"	Select the "SURROUND" mode: "TruSurround" → "SIMULATED" →"OFF"	
	"INTELLIGENT VOL"	Adjust volume automatically: "ON" → "OFF"	

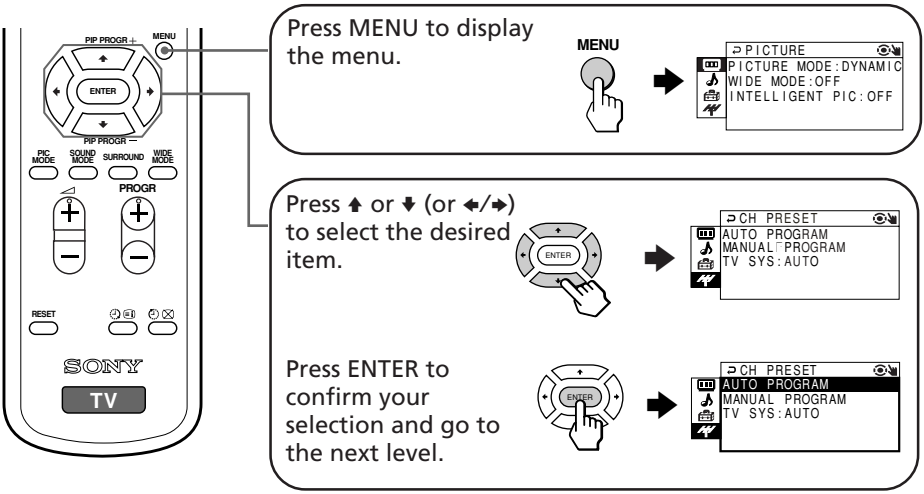
continue

continued

Level 1	Level 2	Level 3/Function	Page
"SETUP"	"LANGUAGE"	Change the menu language: "ENGLISH" → "中文"(Chinese) → "عربي"(Arabic) → "ไทย"(Thai)	22
	"PIC ROTATION"	Adjust the picture position.	
	"PROGRAM SETUP"	Adjust each program number settings.	
	"COLOR SYS"	Select the color system: "AUTO" →" PAL" → "SECAM" → "NTSC3.58" → "NTSC4.43"	
"CH PRESET"	"AUTO PROGRAM"	Preset channels automatically.	24
	"MANUAL PROGRAM"	Preset channels manually.	
	"TV SYS"	Select the TV system: "B/G" → "I" → "D/K" → "M"	

* The BBE is manufactured by Sony Corporation under license from BBE Sound, Inc. It is covered by U.S. Patent No. 4,638,258 and No. 4,482,866. The word "BBE" and the BBE symbol are the trademarks of BBE Sound, Inc.

How to use the menu



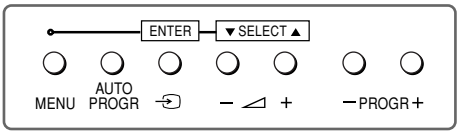
Other menu operations

To	Press
Adjust the setting value	↑, ↓, ← or →.
Move to the next/previous menu level	← or →.
Cancel the menu	MENU.

Tips

- If you want to exit from Menu level 2 to Menu level 1, press ↑ or ↓ until the return icon (⮌) is highlighted, then press ENTER.
- Some of the menu items can be operated directly using the remote buttons.
- The MENU, ENTER, and SELECT ▼/▲ buttons on the TV can also be used for the operations above.

Front of TV

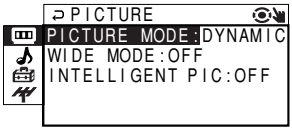


■ Changing the “PICTURE” setting

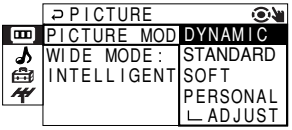
The “PICTURE” menu allows you to adjust the picture settings.

1 Press MENU.

2 Make sure the “PICTURE” icon ( ) is selected, then press ENTER.



3 Press ↑ or ↓ to select the desired item (e.g., “PICTURE MODE”), then press ENTER.



Select	To
“PICTURE MODE”	choose either “DYNAMIC”, “STANDARD”, “SOFT”, “PERSONAL”*, or “ADJUST” (see page 11).
“WIDE MODE”	choose either “ON” or “OFF” (see page 12).
“INTELLIGENT PIC”	optimize picture quality. Press ↑ or ↓ to select “ON”, then press ENTER. To cancel, select “OFF”, then press ENTER.

* When the “PERSONAL” mode is selected, you can receive the last adjusted picture settings from the “ADJUST” option (see page 19).

Adjusting the “ADJUST” items under “PICTURE MODE”

1 Press ↑ or ↓ to select the desired item (e.g.,“COLOR”), then press ENTER.

2 Adjust the value according to the following table, then press ENTER.

For	Press ↓ or ← to	Press ↑ or → to
“PICTURE”	decrease picture contrast.	increase picture contrast.
“COLOR”	decrease color intensity.	increase color intensity.
“BRIGHT”	darken the picture.	brighten the picture.
“HUE”	increase red picture tones.	increase green picture tones.
“SHARP”	soften the picture.	sharpen the picture.

3 Repeat the above steps to adjust other items.

The adjusted settings will be received when you select “PERSONAL”.

Notes

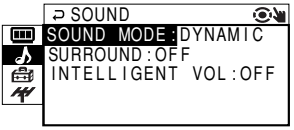
- “HUE” can be adjusted for the NTSC color system only.
- Reducing sharpness (“SHARP”) can also reduce picture noise.

■ Changing the “SOUND” setting

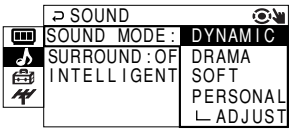
The “SOUND” menu allows you to adjust the sound settings.

1 Press MENU.

2 Press ↑ or ↓ to select the “SOUND” icon (♪), then press ENTER.



3 Press ↑ or ↓ to select the desired item (e.g., “SOUND MODE”), then press ENTER.

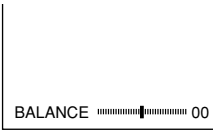


Select	To
“SOUND MODE”	choose either “DYNAMIC”, “DRAMA”, “SOFT”, “PERSONAL”*, or “ADJUST” (see page 11).
“SURROUND”	choose either “TruSurround”, “SIMULATED” or “OFF” (see page 12).
“INTELLIGENT VOL”	adjust the volume of all program numbers and video inputs automatically. Press ↑ or ↓ to select “ON”, then press ENTER. To cancel, select “OFF”, then press ENTER.

* When the “PERSONAL” mode is selected, you can receive the last adjusted sound settings from the “ADJUST” option (see page 21).

Adjusting the “ADJUST” items under “SOUND MODE”

1 Press ↑ or ↓ to select the desired item (e.g., “BALANCE”), then press ENTER.



2 Adjust the value according to the following table, then press ENTER .

For	Press ↓ or ← to	Press ↑ or → to
“BASS”	decrease the bass.	increase the bass.
“TREBLE”	decrease the treble.	increase the treble.
“BALANCE”	increase the left speaker’s volume.	increase the right speaker’s volume.
“BBE”	select “HIGH” for higher enhancement of sound clarity; select “LOW” for lower enhancement of sound clarity; select “OFF” to cancel BBE sound.	

3 Repeat the above steps to adjust other items.

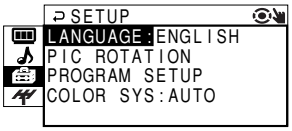
The adjusted settings will be received when you select “PERSONAL”.

■ Changing the “SETUP” setting

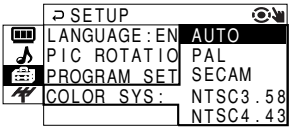
The “SETUP” menu allows you to change the menu language, adjust the picture position, set up your program numbers and select the color system.

1 Press MENU.

2 Press ↑ or ↓ to select the “SETUP” icon (), then press ENTER.



3 Press ↑ or ↓ to select the desired item (e.g., “COLOR SYS”), then press ENTER.

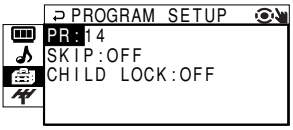


Select	To
“LANGUAGE”	change the menu language. Press ↑ or ↓ to select either “ENGLISH”, “中文” (Chinese), “ عربي ” (Arabic), or “ ไทย ” (Thai), then press ENTER. The selected menu language appears.
“PIC ROTATION”	adjust the picture position when it is not aligned with the TV screen. Press ↑ , → , ↓ or ← to adjust the picture position, then press ENTER.
“PROGRAM SETUP”	adjust each channel settings (see **Adjusting each program number settings (“PROGRAM SETUP”)** on page 23).
“COLOR SYS”	select the color system. Normally, set this to “AUTO”.

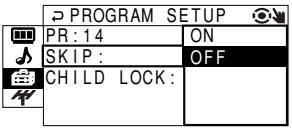
Adjusting each program number settings (“PROGRAM SETUP”)

1 Select “PROGRAM SETUP” from the “SETUP” menu.

2 Select “PR” and press ENTER. Press ↑ or ↓ to select the desired program number you want to adjust, then press ENTER.



3 Press ↑ or ↓ to select the desired item (e.g., “SKIP”), then press ENTER.



Select	To
“PR”	select the desired program number.
“SKIP”	skip unwanted or unused program number. Press ↑ or ↓ to select “ON”, then press ENTER. To cancel, select “OFF”, then press ENTER.
“CHILD LOCK”	prevent children from watching this selected program number. Press ↑ or ↓ to select “ON”, then press ENTER. The lock symbol (🔒) appears on the screen. To cancel, select “OFF”, then press ENTER. If you preset a locked program number, that program number will be unlocked automatically.

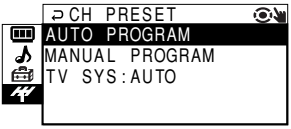
4 To continue adjusting other program numbers, press ↑ or ↓ to select “PR”, then repeat step 2 and 3.

■ Changing the Channel Preset ("CH PRESET") setting

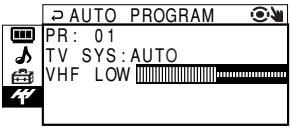
The "CH PRESET" menu allows you to preset channels automatically, manually preset channels and select the TV system.

1 Press MENU.

2 Press ↑ or ↓ to select the "CH PRESET" icon (), then press ENTER.



3 Press ↑ or ↓ to select the desired item (e.g., "AUTO PROGRAM"), then press ENTER.

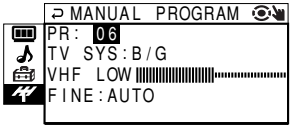


Select	To
"AUTO PROGRAM"	preset channels automatically.
"MANUAL PROGRAM"	manually preset desired channels and channels that cannot be preset automatically (see **Presetting channels manually** on page 25).
"TV SYS"	select the TV system. Press ↑ or ↓ to select either "B/G", "I", "D/K" or "M", then press ENTER.

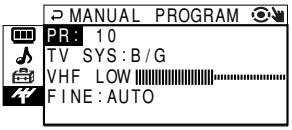
Presetting channels manually

1 After selecting "MANUAL PROGRAM", select the program number to which you want to preset a channel.

(1) Make sure "PR" is selected, then press ENTER.

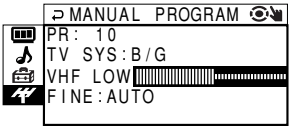


(2) Press ↑ or ↓ until the program number you want to preset (e.g., program number "10") appears on the menu, then press ENTER.

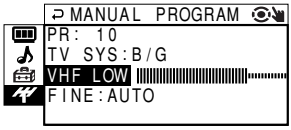


2 Select the desired channel.

(1) Make sure either "VHF LOW", "VHF HIGH", or "UHF" is selected, then press ENTER.

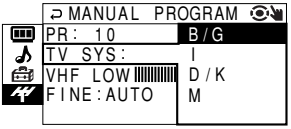


(2) Press ↑ or ↓ until the desired channel's broadcast appears on the TV screen, then press ENTER.

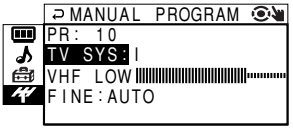


3 If the sound of the desired channel is abnormal, select the appropriate TV system.

(1) Press ↑ or ↓ to select "TV SYS", then press ENTER.



(2) Press ↑ or ↓ until the sound becomes normal, then press ENTER.



Tip

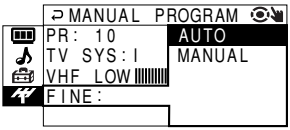
- You can also select the program number with the PROGR +/– or number buttons.

continue

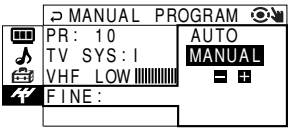
continued

4 If you are not satisfied with the picture and sound quality, you may be able to improve them by using the "FINE" tuning feature.

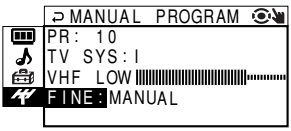
(1) Press ↑ or ↓ to select "FINE", then press ENTER.



(2) Press ↑ or ↓ to select "MANUAL", then press ENTER.



(3) Press ↑, ↓, ← or → until the picture and sound quality are optimal, then press ENTER.
The + or – icon on the menu flashes while tuning.

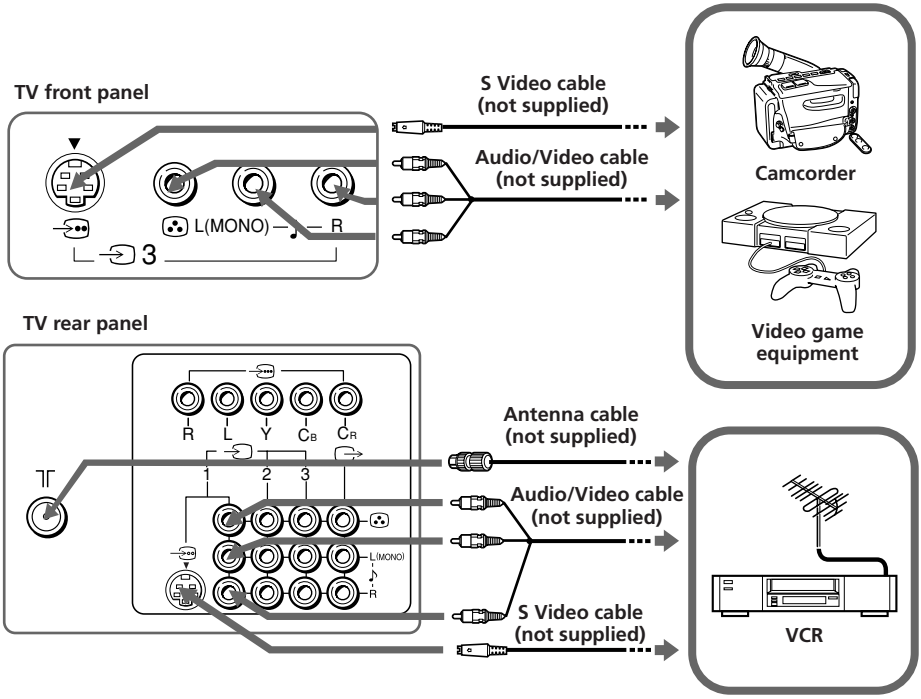


Note

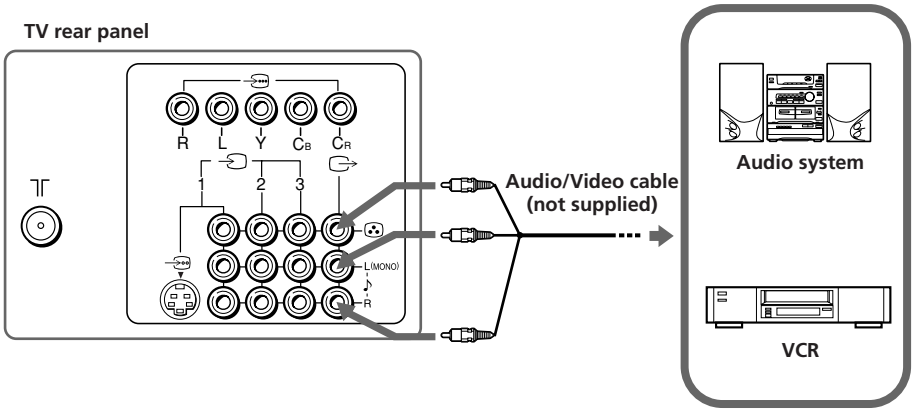
- If you connect a VCR to ⅂⌐ (antenna input), preset the signal output from the VCR to the program number 0 on the TV.

■ Connecting optional components

Connecting to the video input terminal (⇦)



Connecting to the monitor output terminal (⇨)



continue

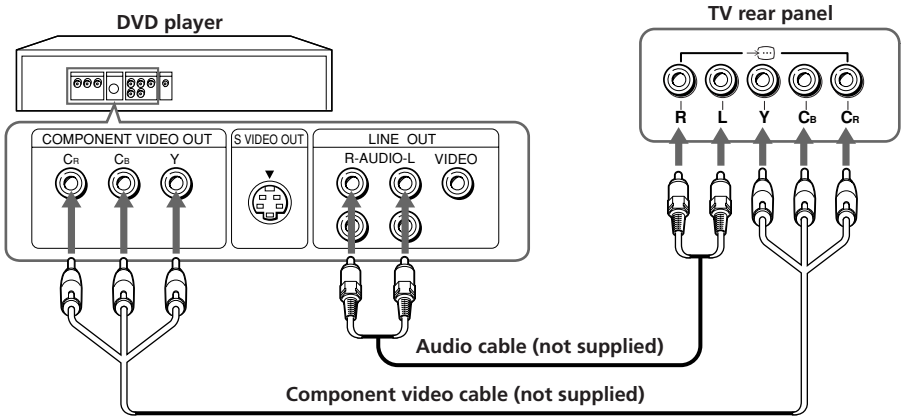
continued

Connecting a DVD player to the component video input terminal ( )

1 Using an audio cable, connect R and L under (component video input) on your TV to the LINE OUT, AUDIO R and L output connectors on your DVD player.

2 Using a component video cable, connect Y, C_B, and C_R under (component video input) on your TV to the COMPONENT VIDEO OUT Y, C_B, and C_R output connectors on your DVD player.

3 Press DVD on the remote to watch the (component video input) and "DVD" will appear on your screen.



Notes

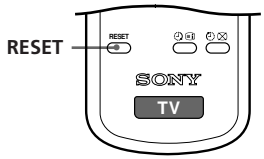
- If your DVD player can ouput interlace and progressive mode signals, select the interlace output when connecting to (component video input) on your TV. Your TV can receive either 525i/60Hz or 625i/50Hz interlace signals.
- Some DVD player terminals may be labeled differently:

Connect	To (on the DVD player)
Y (green)	Y
C_B (blue)	C_B, P_B, C_b or B-Y
C_R (red)	C_R, P_R, C_r or R-Y

- When both (S video) and (video) for 1 or 3 are connected at the same time, (S video) is automatically selected. To view (video), disconnect the S video cable.
- If you select "DVD" on your TV screen, the signal from the (monitor output) jacks will not be output properly. This does not indicate a malfunction.

■ Troubleshooting

If you have any problem while viewing your TV, you can either use the Reset function or check the Troubleshooting guide below. If the problem persists, contact your Sony dealer.

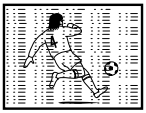


Reset function

Press the RESET button on your remote control. Your TV will go blank for about half a second then the picture will reappear with "RESET" displayed on your TV screen for about 10 seconds.

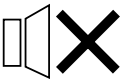
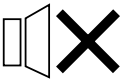
Pressing RESET will set your TV to the factory setting, but certain problems may be solved.

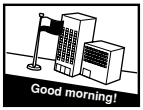
Troubleshooting guide

Symptom	Possible cause	Solutions	Page
Snowy picture  **Noisy sound**	• The connection is loose or the cable is damaged.	• Check the antenna cable and connection on the TV, VCR and at the wall.	27
	• The antenna setup is inappropriate.	• Check the antenna setup. Contact a Sony dealer for advice.	–
	• Channel presetting is inappropriate or incomplete.	• Display the "CH PRESET" menu and select "MANUAL PROGRAM" to preset the channel again.	25
	• Signal transmission is low.	• Try using a booster.	–
Distorted picture **Noisy sound**	• Broadcast signals are too strong.	• Turn off or disconnect the booster if it is in use.	–
Good picture **Noisy sound**	• The TV system setting is inappropriate.	• Display the "CH PRESET" menu and select the appropriate TV system ("TV SYS").	25

continue

continued

Symptom	Possible cause	Solutions	Page
No picture **No sound** 	• The power cord, antenna or VCR is not connected.	• Check the power cord, antenna and VCR connections.	27
	• The TV is not turned on.	• Press I/⏻ (power). • Press ⏻ (main power) on the TV to turn off the TV for about five seconds, then turn it on again.	9 8
Good picture **No sound** 	• The volume level is too low.	• Press + to increase the volume level.	9
	• The sound is muted.	• Press 🔇 to cancel the muting.	9
Dotted lines or stripes 	• There is local interference from cars, neon signs, hair dryers, power generators, etc.	• Do not use a hair dryer or other equipment near the TV. • Check the antenna setup. Contact a Sony dealer for advice.	– –
Double images or "ghosts" 	• Broadcast signals are reflected by nearby mountains or buildings.	• Use a highly directional antenna. • Use the fine tuning ("FINE") function.	– 26
	• The antenna setup is inappropriate.	• Check the antenna setup. Contact a Sony dealer for advice.	–
	• Use of a booster is inappropriate.	• Turn off or disconnect the booster if it is in use.	–
No color 	• The color level setting is too low.	• Display the "PICTURE" menu and select "ADJUST" of "PICTURE MODE", then adjust the "COLOR" level.	19
	• The color system setting is inappropriate.	• Display the "SETUP" menu and check the color system ("COLOR SYS") setting (usually set this to "AUTO").	22
	• The antenna setup is inappropriate.	• Check the antenna setup. Contact a Sony dealer for advice.	–

Symptom	Possible cause	Solutions	Page
Picture slant 	• The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV.	• Keep external speakers or other electrical equipment away from the TV. • Display the "SETUP" menu and adjust "PIC ROTATION" so that the picture position is optimal.	– 22
Abnormal color patches 	• The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV.	• Keep external speakers or other equipment away from the TV. Do not move the TV while the TV is turned on. Press ⏻ (main power) on the TV to turn off the TV for about 15 minutes, then turn it on again to demagnetize the TV.	–
TV cannot receive stereo broadcast sound.	• The stereo reception setting is inappropriate.	• Press A/B until "AUTO" appears on the screen.	13
or	• The connection is loose or the cable is damaged.	• Check the antenna cable and connection on the TV, VCR and on the wall.	27
Stereo broadcast sound switches on and off or is distorted.	• The antenna setup is inappropriate.	• Check the antenna setup. Contact a Sony dealer for advice.	–
The ⏻ (standby) indicator on your TV flashes red several times after every three seconds.	• Your TV's self-diagnosis function indicates the possible problems.	• Count the number of times the ⏻ (standby) indicator flashes. Press ⏻ (main power) to turn off your TV. Contact your nearest Sony service center.	–
Cannot play shooting game.	• Some shooting games which involve pointing a light beam at the TV screen with an electronic gun or rifle cannot be used with your TV. For details, see the instruction manual supplied with the video game software.	—	–
TV cabinet creaks.	• Changes in room temperature sometimes make the TV cabinet expand or contract, causing a noise. This does not indicate a malfunction.	—	–
A small "boom" sound is heard when the TV is turned on.	• The TV's demagnetizing function is working. This does not indicate a malfunction.	—	–

■ Specifications

	KV-AR25M90	Note
Power requirements	220-240 V AC, 50/60 Hz	
Power consumption (W)	Indicated on the rear of the TV	
Television system	B/G, I, D/K, M	
Color system	PAL, PAL 60, SECAM, NTSC3.58, NTSC4.43	
Stereo/Bilingual system	NICAM Stereo/Bilingual B/G, I; A2 Stereo/Bilingual B/G	
Channel coverage		
B/G	VHF : E2 to E12 UHF : E21 to E69 CATV: S01 to S03, S1 to S41	
I	UHF : B21 to B68 CATV: S01 to S03, S1 to S41	
D/K	VHF : C1 to C12, R1 to R12 UHF : C13 to C57, R21 to R60 CATV: S01 to S03, S1 to S41, Z1 to Z39	
M	VHF : A2 to A13 UHF : A14 to A79 CATV: A-8 to A-2, A to W+4, W+6 to W+84	
Antenna	75-ohm external terminal	
Audio output (Speaker)	8W + 8W	
Number of terminal		
(Video)	Input: 4* Output: 1 Phono jacks; 1 Vp-p, 75 ohms	* Three input lines available
(Audio)	Input: 4* Output: 1 Phono jacks; 500 mVrms	* Three input lines available
(S Video)	Input: 2 Y: 1 Vp-p, 75 ohms, unbalanced, sync negative C: 0.286 Vp-p, 75 ohms	
(Component Video)	Input: 1 Phono jacks; Y: 1 Vp-p, 75 ohms, sync negative C_B: 0.7 Vp-p, 75 ohms C_R: 0.7 Vp-p, 75 ohms Audio: 500 mVrms	
(Headphone)	Output: 1 Stereo minijack	
Picture tube	25 in.	
Tube size (cm)	64	Measured diagonally
Screen size (cm)	60	Measured diagonally
Dimensions (w/h/d, mm)	650 × 517 × 496	
Mass (kg)	39	

Design and specifications are subject to change without notice.

http://www.sony.net/
Sony Corporation

SONY

4-090-530-**11** (1)

Trinitron Color TV

Operating Instructions **GB**

- Before operating the unit, please read this manual thoroughly and retain it for future reference.

FD Trinitron
WEGA

KV-AR29
KV-AR25

M31

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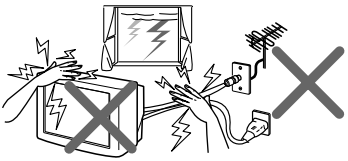
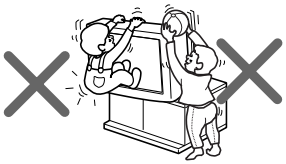
WARNING

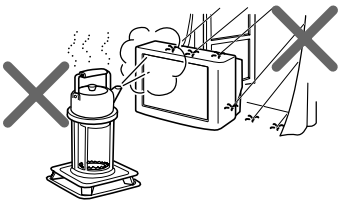
- Dangerously high voltages are present inside the TV.
- TV operating voltage: 220-240 V AC.
- Do not plug in the power cord until you have completed making all other connections; otherwise a minimum leakage current might flow through the antenna and other terminals to ground.
- To avoid battery leakage and damage to the remote, remove the batteries from the remote if you are not going to use it for several days. If any liquid leaks from the batteries and touches your skin, immediately wash it away with water.



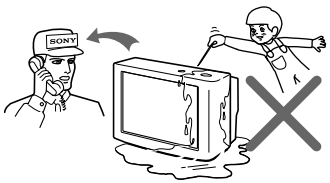
For your own safety, do not touch any part of the TV, the power cord and the antenna cable during lightning storms.



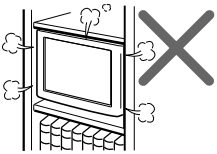
For children's safety, do not leave children alone with the TV. Do not allow children to climb onto it.



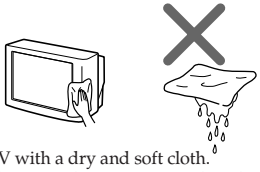
To prevent fire or shock hazard, do not expose the TV to rain or moisture.



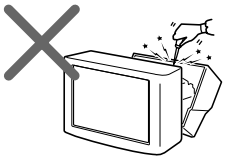
Do not operate the TV if any liquid or solid object falls into it. Have it checked immediately by qualified personnel only.



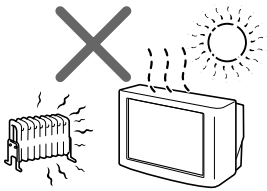
Do not block the ventilation openings of the TV.
Do not install the TV in a confined space, such as a bookcase or built-in cabinet.



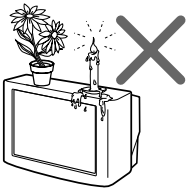
Clean the TV with a dry and soft cloth.
Do not use benzine, thinner, or any other chemicals to clean the TV. Do not attach anything (e. g., adhesive tape, cellophane tape, glue) on the painted cabinet of the TV. Do not scratch the picture tube.



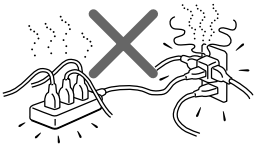
Do not open the cabinet and the rear cover of the TV as high voltages and other hazards are present inside the TV. Refer servicing and disposal of the TV to qualified personnel.



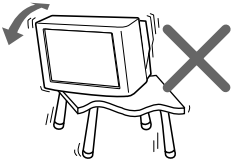
Your TV is recommended for home use only.
Do not use the TV in any vehicle or where it may be subject to excessive dust, heat, moisture or vibrations.



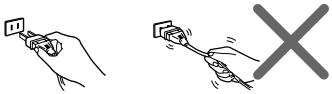
Do not place any objects on the TV.



Do not plug in too many appliances to the same power socket. Do not damage the power cord.



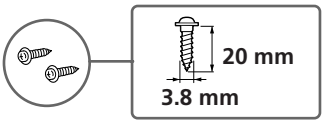
Install the TV on a stable TV stand and floor which can support the TV set weight. Ensure that the TV stand surface is flat and its area is larger than the bottom area of the TV.



Pull the power cord out by the plug. Do not pull the power cord itself. Even if your TV is turned off, it is still connected to the AC power source (mains) as long as the power cord is plugged in. Unplug the TV before moving it or if you are not going to use it for several days.

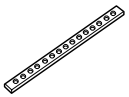
■ Securing the TV

To prevent the TV from falling, use the supplied screws, clamps and band to secure the TV.

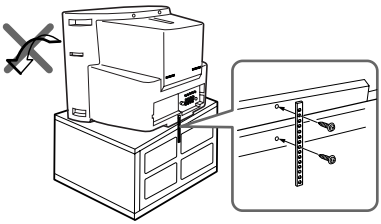


screws

clamps

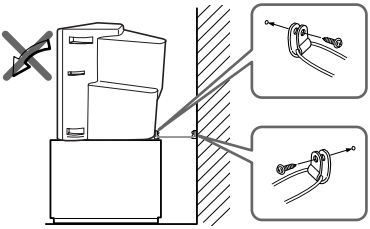


band



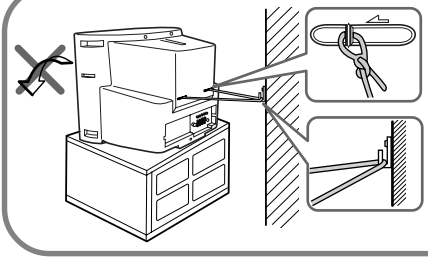
Screw the band to the TV stand and to the provided hole at the rear of your TV.

or



(1) Put a cord or chain through the clamps.
(2) Screw one clamp to a wall or pillar and the other clamp to the provided hole at the rear of your TV.

or



(1) Attach each end of a cord or chain to the provided holders at the rear of your TV.
(2) Securely fix the attached cord or chain to a wall or pillar using an attachment which can support the TV set weight.

Note

- Use only the supplied screws. Use of other screws may damage the TV.

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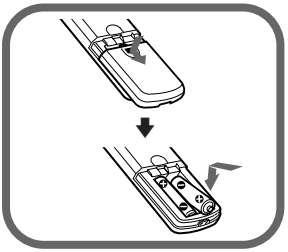
GB

■ Getting Started

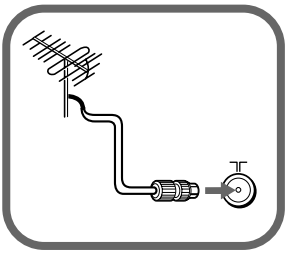


Step 1

Insert the batteries (supplied) into the remote.

Note

- Do not use old or different types of batteries together.

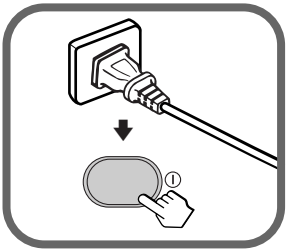


Step 2

Connect the antenna cable (not supplied) to ⊤ (antenna input) at the rear of the TV.

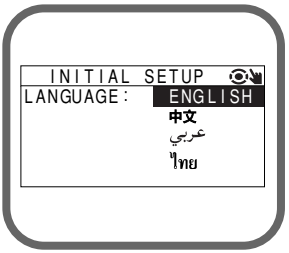
Tip

- You can also connect your TV to other optional components (see page 28).



Step 3

Plug in the power cord, then press ⏻ on the TV to turn it on.

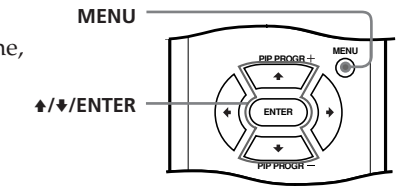


Step 4

Set up the TV by following the instructions of the "INITIAL SETUP"menu (see page 7).

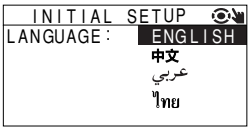
■ Setting up your TV (“INITIAL SETUP”)

When you turn on your TV for the first time, the “INITIAL SETUP” menu will appear. This menu allows you to change the menu language, adjust the picture position and preset the TV channels automatically.



1 Press ↑ or ↓ to select the desired menu language (e.g.,”ENGLISH”), then press ENTER.

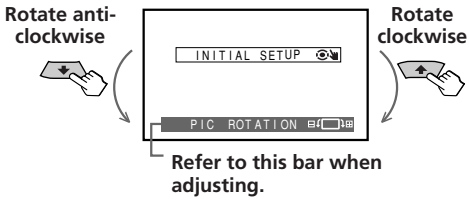
The selected menu language appears.



2 If the “PIC ROTATION” bar is slanted, press ↑ or ↓ to adjust it, then press ENTER.

If no adjustment is necessary, then press ENTER.

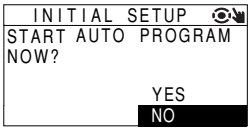
The ⊞ or ⊟ icon on the screen flashes while adjusting.

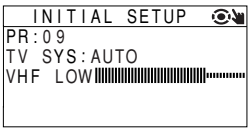


3 Press ↑ or ↓ to select “YES”, then press ENTER to preset the channels automatically (see page 25).

The screen will indicate automatic presetting is in progress.

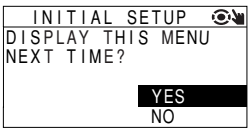
To skip automatic channel presetting, select “NO”, then press ENTER.





4 Press ↑ or ↓ to select “NO”, then press ENTER. The “INITIAL SETUP” menu will not appear again the next time you turn on the TV by pressing ⏻.

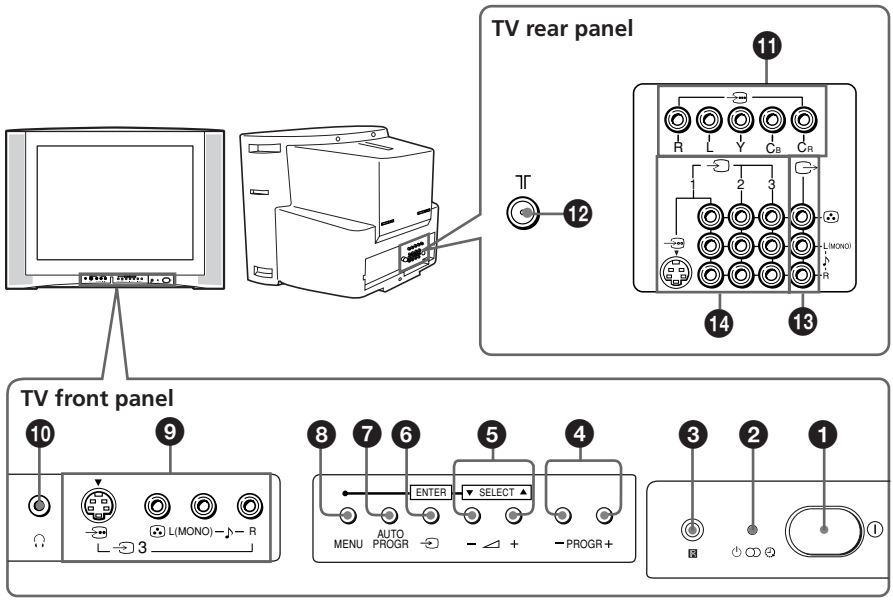
To allow this menu to appear again, select “YES”, then press ENTER.



Tips

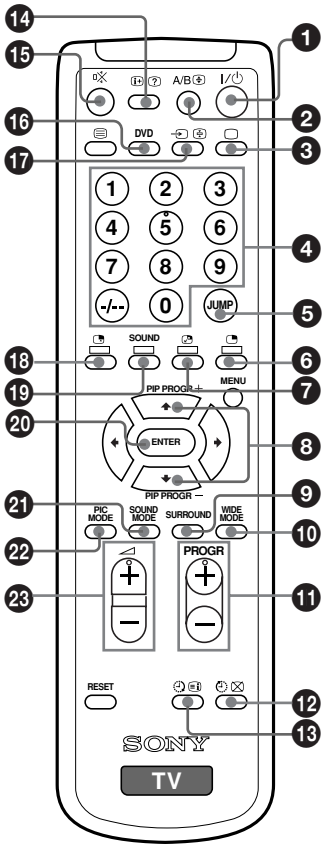
- You can immediately go to the end of the ”INITIAL SETUP” menu by pressing MENU.
- You can also set up your TV using the menu system (see page 16).

■ TV front and rear panels



Button/Terminal	Function	Page
❶ ⏻	Turn off or turn on the TV.	6
❷ ⏻	Standby indicator.	–
❷ 🕘	Wake Up indicator.	13
❷ ◯◯	Stereo/bilingual indicator.	14
❸	Remote control sensor.	–
❹ PROGR +/–	Select program number.	–
❺ +/–	Adjust volume.	–
❻	Select TV or video input.	–
❼ AUTO PROGR	Preset channels automatically.	–
Menu operations		
❺ SELECT ▼/▲	Select and adjust items.	18
❻ ENTER	Confirm selected items.	18
❽ MENU	Display or cancel the menu.	18
❾ 3	Video input terminal 3.	28
❿	Headphone jack.	–
⓫	Component video input terminal.	29
⓬	Antenna input terminal.	28
⓭	Monitor output terminal.	28
⓮ 1, 2, 3	Video input terminal 1, 2, 3.	28

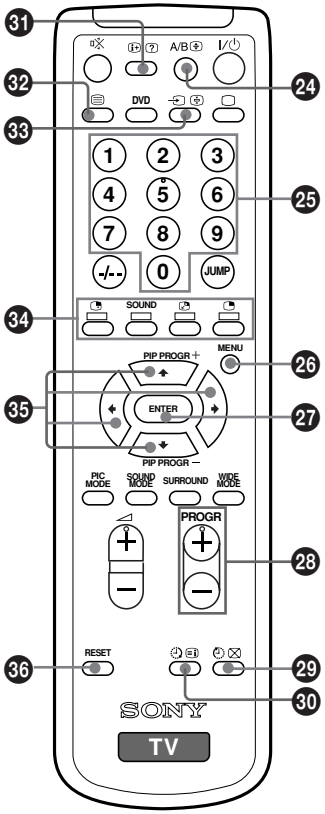
■ Remote control



Button	Function	Page
❶ I/⏻	Turn off temporarily or turn on the TV.	–
❸ ▭	Display the TV input.	–
❹ 0 – 9, -/--	Input numbers.	–
❺ JUMP	Jump to previous program number.	–
❾ SURROUND	Select surround mode.	12
❿ WIDE MODE	Select wide-mode (16:9).	12
⓫ PROGR +/–	Select program number.	–
⓮ i+	Display on-screen information.	–
⓯ 🔇	Mute the sound.	–
⓰ DVD	Select DVD input.	29
⓱ ⏎	Select TV or video input.	28
㉑ SOUND MODE	Select sound mode.	11
㉒ PIC MODE	Select picture mode.	11
㉓ 🔊 +/–	Adjust volume.	–
Timer operations		
⓬ ⏲	Set TV to turn off automatically.	13
⓭ ⏲	Set TV to turn on automatically.	13
PIP operations (yellow label)		
❻ ▣	Not function for your TV.	–
❼ ♪		
❽ PIP PROGR + / PIP PROGR –		
⓲ ▣		
⓳ SOUND		
⓴ ENTER		
Stereo/bilingual operations		
❷ A/B	Select stereo/bilingual mode.	14

continue

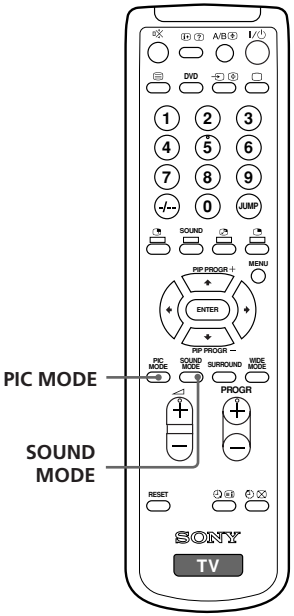
continued



Button	Function	Page
Menu operations		
26 MENU	Display or cancel the menu.	18
27 ENTER	Confirm selected items.	18
35 ↑, ↓, ←, →	Select and adjust items.	18
Teletext operations (green label)		
24 ⊕	Enlarge the Teletext display.	15
25 0 – 9	Input Teletext page number.	15
28 PROGR +/–	Display the next or previous page.	15
29 ⊠	Show TV screen while waiting for Teletext page.	15
30 ⓘ	Display Teletext service contents.	15
31 ?	Reveal concealed information.	15
32 ☰	Display Teletext broadcast.	15
33 ⊟	Stop Teletext display from scrolling.	15
34 ▬ (red, green, yellow, blue)	Access a FASTEXT menu.	15
36 RESET	Set TV to factory setting.	30

Selecting the picture and sound modes

You can select picture and sound modes and adjust the setting to your preference in the “PERSONAL” option.



Selecting the picture mode

Press PIC MODE to select the desired picture mode.

Select	To
“DYNAMIC”	view high contrast pictures.
“STANDARD”	view normal pictures.
“SOFT”	view mild pictures.
“PERSONAL”	receive the last adjusted picture setting from the “ADJUST” option in the “PICTURE” menu (see page 20).

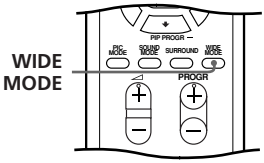
Selecting the sound mode

Press SOUND MODE to select the desired sound mode.

Select	To
“♪ DYNAMIC”	listen to dynamic and clear sound that emphasizes both the low and high tones.
“♪ DRAMA”	listen to sound that emphasizes voice and high tones.
“♪ SOFT”	listen to soft sound.
“♪ PERSONAL”	receive the last adjusted sound setting from the “ADJUST” option in the “SOUND” menu (see page 22).

Viewing the picture in wide mode

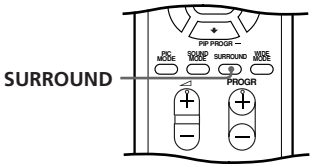
When receiving a wide-mode (16:9) signal, the picture will appear "squeezed" (compressed) on your screen. Use the WIDE MODE button to view the picture with the optimal effect.



Select	To
"ON"	view the picture in wide-mode (16:9).
"OFF"	cancel wide-mode (16:9).

Listening with surround sound

You can use the SURROUND button to listen to the sound effects of a concert hall or movie theater.



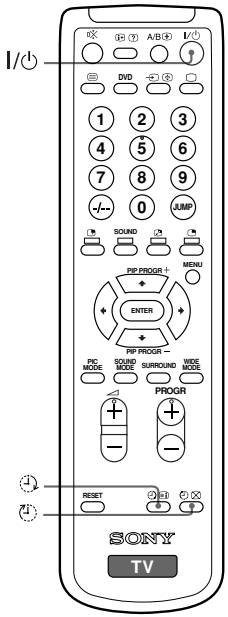
Select	To
"TruSurround"	listen to the surround sound that spreads out to the rear of a room.
"SIMULATED"	listen to monaural sound with a stereo-like effect.
"OFF"	cancel surround sound.

The surround of your TV is categorized as TruSurround.

TruSurround™ is a trademark of SRS Labs, Inc. SRS and the SRS symbol are registered trademarks of SRS Labs, Inc. in the United States and selected foreign countries. SRS and TruSurround are incorporated under license from SRS Labs, Inc. and are protected under United States Patent Nos. 4,748,669 and 4,841,572 with numerous additional issued and pending foreign patents.

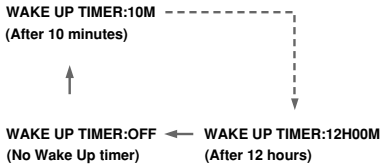
■ Setting the timers

You can set your TV to turn on and off automatically by using the Wake Up timer and Sleep timer respectively.



Setting the Wake Up timer

1 Press 🕘 until the desired period of time appears on the screen.



The Wake Up timer starts immediately after you have set it.

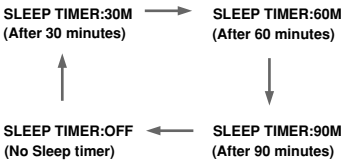
2 Select the program number or video input you want to wake up to.

3 Press I/⏻, or set the Sleep timer if you want the TV to turn off automatically.

The 🕘 indicator on the TV lights up orange when the TV goes into standby mode.

Setting the Sleep timer

Press 🕘 until the desired period of time appears on the screen.



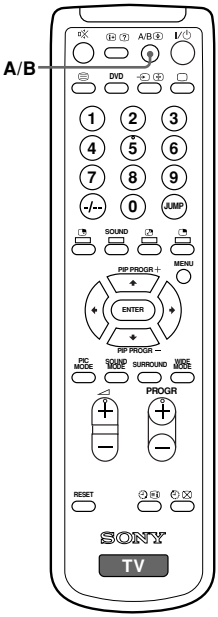
The Sleep timer starts immediately after you have set it.

Notes

- You can also cancel the Wake Up and Sleep timers by pressing ⏻ on the TV to turn off the TV.
- If no buttons are pressed for more than two hours after the TV is turned on using the Wake Up timer, the TV automatically goes into standby mode.

■ Enjoying stereo or bilingual programs

You can enjoy stereo sound or bilingual programs of NICAM and A2 stereo systems by using the A/B button.



When receiving a NICAM program

Broadcasting	On-screen display (Selected sound)
NICAM stereo	NICAM (Stereo sound) → MONO (Regular sound)
NICAM bilingual	NICAM MAIN (Main sound) → NICAM SUB (Sub sound) → MONO (Regular sound)
NICAM monaural	NICAM MAIN (Main sound) → MONO (Regular sound)

When receiving an A2 program

Broadcasting	On-screen display (Selected sound)
A2 stereo	STEREO (Stereo sound) → MONO (Regular sound)
A2 bilingual	MAIN (Main sound) → SUB (Sub sound)

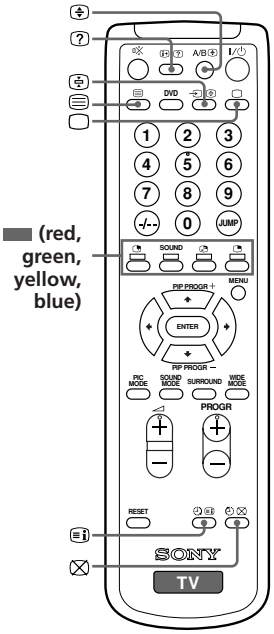
Notes

- If the stereo sound is noisy when receiving a stereo program, select "MONO". The sound becomes monaural, but the noise is reduced.
- If the sound is distorted when receiving a monaural program through ⅂⊢ (antenna input), press A/B repeatedly until "MONO" appears on the screen. To cancel the monaural sound setting, press A/B again until "AUTO" appears on the screen.

■ Viewing Teletext

Some TV stations broadcast an information service called Teletext which allows you to receive various information, such as stock market reports and news.

You can use the buttons on the remote to view Teletext.



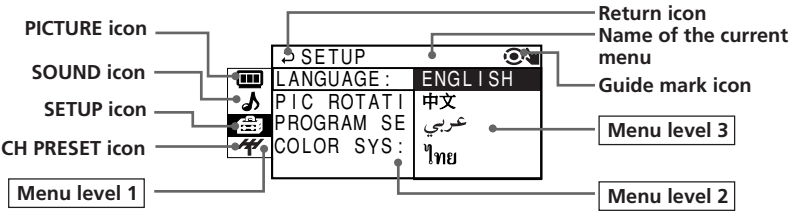
To	Do this
display a Teletext page on the TV picture	Press ☰. Each time you press ☰, the screen changes as follows: Teletext → Teletext and TV → TV. If there is no Teletext broadcast, "100" is displayed at the top left corner of the screen.
check the contents of a Teletext service	Press ⓘ. An overview of the Teletext contents, including page numbers, appears on the screen.
select a Teletext page	Press the number buttons to enter the three-digit page number of the desired Teletext page. If you make a mistake, reenter the correct page number. To access the next or previous page, press PROGR +/–.
hold (pause) a Teletext display	Press ⊕ to display the symbol "⊕" at the top left corner of the screen. To resume normal Teletext viewing, press ⊕ or ☰.
reveal concealed information (e.g., an answer to a quiz)	Press ?. To conceal the information, press the button again.
enlarge the Teletext display	Press ⊕. Each time you press ⊕, the Teletext display changes as follows: Enlarge upper half → Enlarge lower half → Normal size.
stand by for a Teletext page while watching a TV program	1 Enter the Teletext page number that you want to refer to, then press ⊠. 2 When the page number is displayed, press ☰ to show the text.
select a FASTEXT menu or the colored boxes	Press ■ (red, green, yellow and blue) that corresponds to the desired menu or page number.
turn off Teletext	Press ▭.

Note

- The FASTEXT feature can be used only when the FASTEXT broadcast is available.

■ Introducing the menu system

The MENU button lets you open a menu and change the settings of your TV. The following is an overview of the menu system.

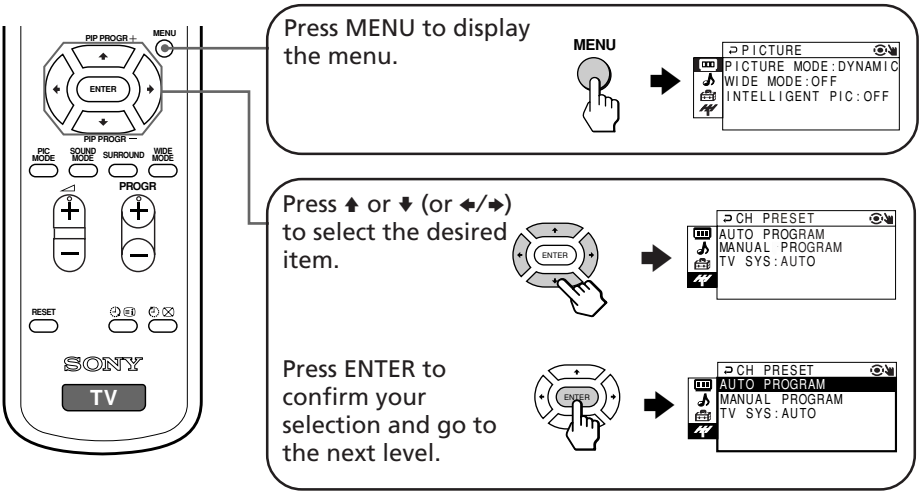


Level 1	Level 2	Level 3/Function	Page
"PICTURE"	"PICTURE MODE"	Select the picture mode: "DYNAMIC" → "STANDARD" → "SOFT" → "PERSONAL" → "ADJUST"	19
	"ADJUST"	Adjust the "PERSONAL" option: "PICTURE" → "COLOR" → "BRIGHT" → "HUE" → "SHARP"	
	"WIDE MODE"	Change the picture size: "ON" → "OFF"	
	"INTELLIGENT PIC"	Optimize picture quality: "ON" → "OFF"	
"SOUND"	"SOUND MODE"	Select the sound mode: "DYNAMIC" → "DRAMA" → "SOFT" → "PERSONAL" → "ADJUST"	21
	"ADJUST"	Adjust the "PERSONAL" option: "BASS" → "TREBLE" → "BALANCE" → "BBE"*	
	"SURROUND"	Select the "SURROUND" mode: "TruSurround" → "SIMULATED" → "OFF"	
	"INTELLIGENT VOL"	Adjust volume automatically: "ON" → "OFF"	
SETUP"	"LANGUAGE"	Change the menu language: "ENGLISH" → "中文"(Chinese) → "عربي"(Arabic) → "ไทย"(Thai)	23
	"PIC ROTATION"	Adjust the picture position.	
	"PROGRAM SETUP"	Adjust each program number settings.	
	"COLOR SYS"	Select the color system: "AUTO" → " PAL" → "SECAM" → "NTSC3.58" → "NTSC4.43"	

Level 1	Level 2	Level 3/Function	Page
"CH PRESET"	"AUTO PROGRAM"	Preset channels automatically.	25
	"MANUAL PROGRAM"	Preset channels manually.	
	"TV SYS"	Select the TV system: "B/G" → "I" → "D/K" → "M"	

* The BBE is manufactured by Sony Corporation under license from BBE Sound, Inc. It is covered by U.S. Patent No. 4,638,258 and No. 4,482,866. The word "BBE" and the BBE symbol are the trademarks of BBE Sound, Inc.

How to use the menu



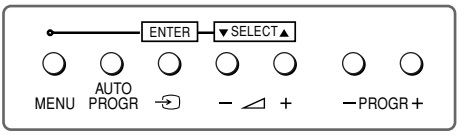
Other menu operations

To	Press
Adjust the setting value	↑, ↓, ← or →.
Move to the next/previous menu level	← or →.
Cancel the menu	MENU.

Tips

- If you want to exit from Menu level 2 to Menu level 1, press ↑ or ↓ until the return icon (⮌) is highlighted, then press ENTER.
- Some of the menu items can be operated directly using the remote buttons.
- The MENU, ENTER, and SELECT ▼/▲ buttons on the TV can also be used for the operations above.

Front of TV

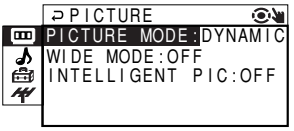


■ Changing the “PICTURE” setting

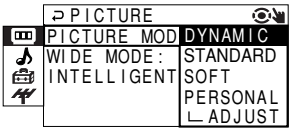
The “PICTURE” menu allows you to adjust the picture settings.

1 Press MENU.

2 Make sure the “PICTURE” icon (▣) is selected, then press ENTER.



3 Press ↑ or ↓ to select the desired item (e.g., “PICTURE MODE”), then press ENTER.



Select	To
“PICTURE MODE”	choose either “DYNAMIC”, “STANDARD”, “SOFT”, “PERSONAL”*, or “ADJUST” (see page 11).
“WIDE MODE”	choose either “ON” or “OFF” (see page 12).
“INTELLIGENT PIC”	optimize picture quality. Press ↑ or ↓ to select “ON”, then press ENTER. To cancel, select “OFF”, then press ENTER.

* When the “PERSONAL” mode is selected, you can receive the last adjusted picture settings from the “ADJUST” option (see page 20).

continue

continued

Adjusting the "ADJUST" items under "PICTURE MODE"

1 Press ↑ or ↓ to select the desired item (e.g.,"COLOR"), then press ENTER.

2 Adjust the value according to the following table, then press ENTER.

For	Press ↓ or ← to	Press ↑ or → to
"PICTURE"	decrease picture contrast.	increase picture contrast.
"COLOR"	decrease color intensity.	increase color intensity.
"BRIGHT"	darken the picture.	brighten the picture.
"HUE"	increase red picture tones.	increase green picture tones.
"SHARP"	soften the picture.	sharpen the picture.

3 Repeat the above steps to adjust other items.

The adjusted settings will be received when you select "PERSONAL".

Notes

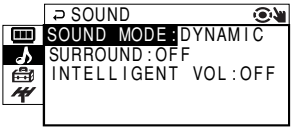
- "HUE" can be adjusted for the NTSC color system only.
- Reducing sharpness ("SHARP") can also reduce picture noise.

■ Changing the “SOUND” setting

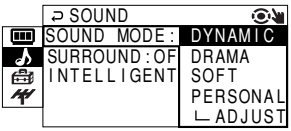
The “SOUND” menu allows you to adjust the sound settings.

1 Press MENU.

2 Press ↑ or ↓ to select the “SOUND” icon (♪), then press ENTER.



3 Press ↑ or ↓ to select the desired item (e.g., “SOUND MODE”), then press ENTER.

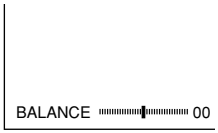


Select	To
“SOUND MODE”	choose either “DYNAMIC”, “DRAMA”, “SOFT”, “PERSONAL”*, or “ADJUST” (see page 11).
“SURROUND”	choose either “TruSurround”, “SIMULATED” or “OFF” (see page 12).
“INTELLIGENT VOL”	adjust the volume of all program numbers and video inputs automatically. Press ↑ or ↓ to select “ON”, then press ENTER. To cancel, select “OFF”, then press ENTER.

* When the “PERSONAL” mode is selected, you can receive the last adjusted sound settings from the “ADJUST” option (see page 22).

Adjusting the “ADJUST” items under “SOUND MODE”

1 Press ↑ or ↓ to select the desired item (e.g., “BALANCE”), then press ENTER.



2 Adjust the value according to the following table, then press ENTER .

For	Press ↓ or ← to	Press ↑ or → to
“BASS”	decrease the bass.	increase the bass.
“TREBLE”	decrease the treble.	increase the treble.
“BALANCE”	increase the left speaker’s volume.	increase the right speaker’s volume.
“BBE”	select “HIGH” for higher enhancement of sound clarity; select “LOW” for lower enhancement of sound clarity; select “OFF” to cancel BBE sound.	

3 Repeat the above steps to adjust other items.

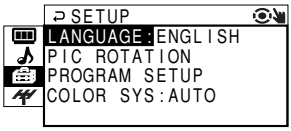
The adjusted settings will be received when you select “PERSONAL”.

■ Changing the “SETUP” setting

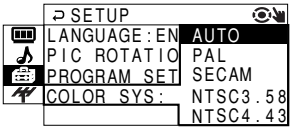
The “SETUP” menu allows you to change the menu language, adjust the picture position, set up your program numbers and select the color system.

1 Press MENU.

2 Press ↑ or ↓ to select the “SETUP” icon (🧰), then press ENTER.



3 Press ↑ or ↓ to select the desired item (e.g., “COLOR SYS”), then press ENTER.

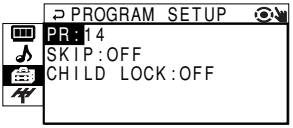


Select	To
“LANGUAGE”	change the menu language. Press ↑ or ↓ to select either “ENGLISH”, “中文” (Chinese), “ عربي ” (Arabic), or “ ไทย ” (Thai) then press ENTER. The selected menu language appears.
“PIC ROTATION”	adjust the picture position when it is not aligned with the TV screen. Press ↑ , → , ↓ or ← to adjust the picture position, then press ENTER.
“PROGRAM SETUP”	adjust each channel settings (see **Adjusting each program number settings (“PROGRAM SETUP”)** on page 24).
“COLOR SYS”	select the color system. Normally, set this to “AUTO”.

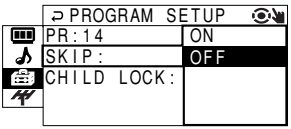
Adjusting each program number settings (“PROGRAM SETUP”)

1 Select “PROGRAM SETUP” from the “SETUP” menu.

2 Select “PR” and press ENTER. Press ↑ or ↓ to select the desired program number you want to adjust, then press ENTER.



3 Press ↑ or ↓ to select the desired item (e.g., “SKIP”), then press ENTER.



Select	To
“PR”	select the desired program number.
“SKIP”	skip unwanted or unused program number. Press ↑ or ↓ to select “ON”, then press ENTER. To cancel, select “OFF”, then press ENTER.
“CHILD LOCK”	prevent children from watching this selected program number. Press ↑ or ↓ to select “ON”, then press ENTER. The lock symbol (🔒) appears on the screen. To cancel, select “OFF”, then press ENTER. If you preset a locked program number, that program number will be unlocked automatically.

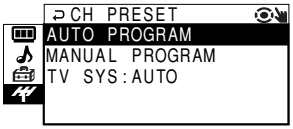
4 To continue adjusting other program numbers, press ↑ or ↓ to select “PR”, then repeat step 2 and 3.

■ Changing the Channel Preset (“CH PRESET”) setting

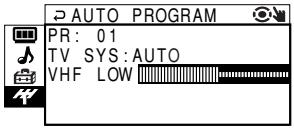
The “CH PRESET” menu allows you to preset channels automatically, manually preset channels and select the TV system.

1 Press MENU.

2 Press ↑ or ↓ to select the “CH PRESET” icon (), then press ENTER.



3 Press ↑ or ↓ to select the desired item (e.g., “AUTO PROGRAM”), then press ENTER.

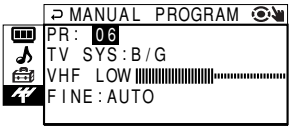


Select	To
“AUTO PROGRAM”	preset channels automatically.
“MANUAL PROGRAM”	manually preset desired channels and channels that cannot be preset automatically (see **Presetting channels manually** on page 26).
“TV SYS”	select the TV system. Press ↑ or ↓ to select either “B/G”, “I”, “D/K” or “M”, then press ENTER.

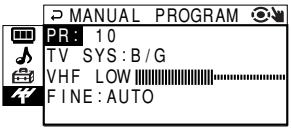
Presetting channels manually

1 After selecting "MANUAL PROGRAM", select the program number to which you want to preset a channel.

(1) Make sure "PR" is selected, then press ENTER.

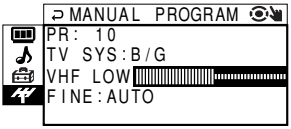


(2) Press ↑ or ↓ until the program number you want to preset (e.g., program number "10") appears on the menu, then press ENTER.

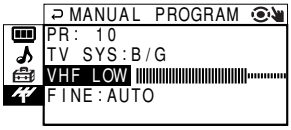


2 Select the desired channel.

(1) Make sure either "VHF LOW", "VHF HIGH", or "UHF" is selected, then press ENTER.

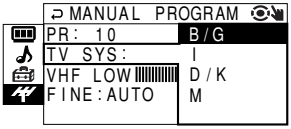


(2) Press ↑ or ↓ until the desired channel's broadcast appears on the TV screen, then press ENTER.

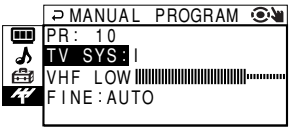


3 If the sound of the desired channel is abnormal, select the appropriate TV system.

(1) Press ↑ or ↓ to select "TV SYS", then press ENTER.



(2) Press ↑ or ↓ until the sound becomes normal, then press ENTER.

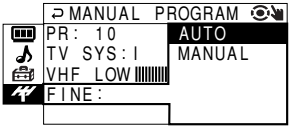


Tip

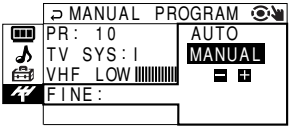
- You can also select the program number with the PROGR +/– or number buttons.

4 If you are not satisfied with the picture and sound quality, you may be able to improve them by using the "FINE" tuning feature.

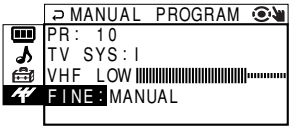
(1) Press ↑ or ↓ to select "FINE", then press ENTER.



(2) Press ↑ or ↓ to select "MANUAL", then press ENTER.



(3) Press ↑, ↓, ← or → until the picture and sound quality are optimal, then press ENTER.
The + or – icon on the menu flashes while tuning.

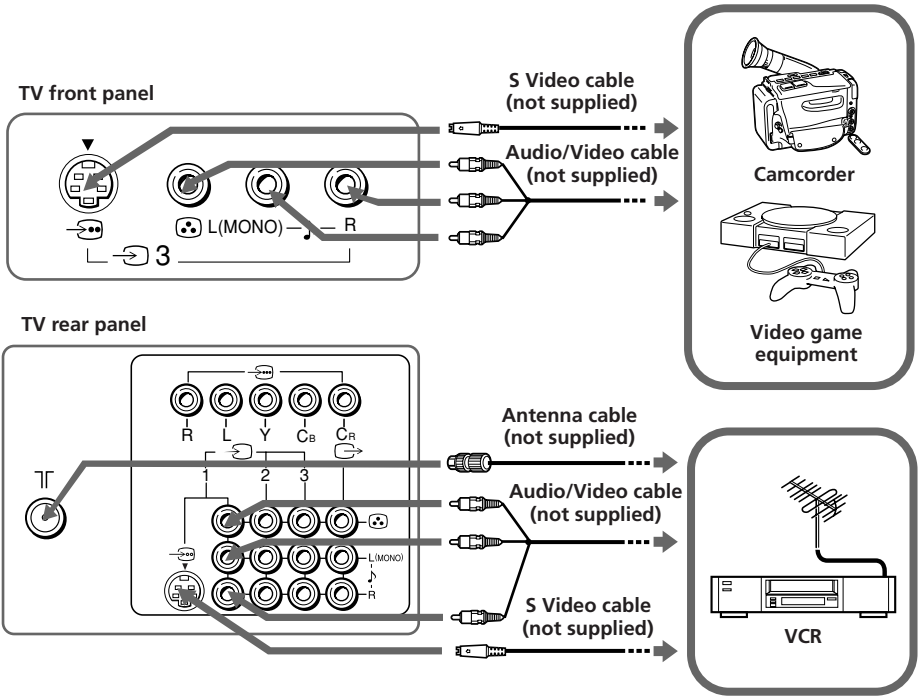


Note

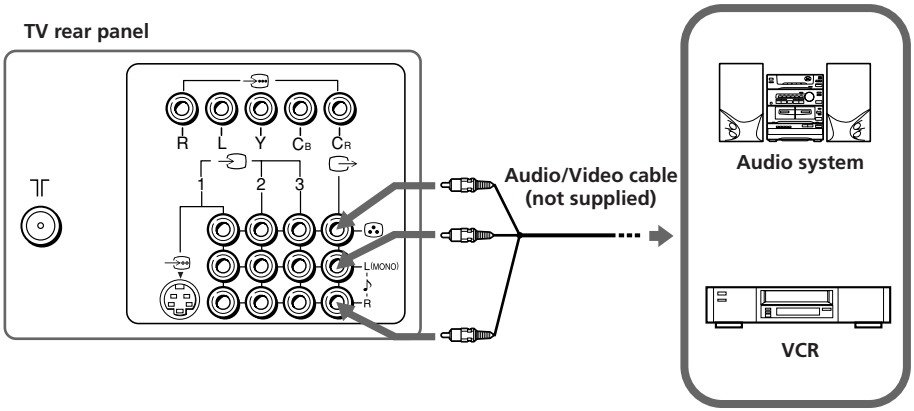
- If you connect a VCR to ⅂ (antenna input), preset the signal output from the VCR to the program number 0 on the TV.

■ Connecting optional components

Connecting to the video input terminal ( )



Connecting to the monitor output terminal ( )

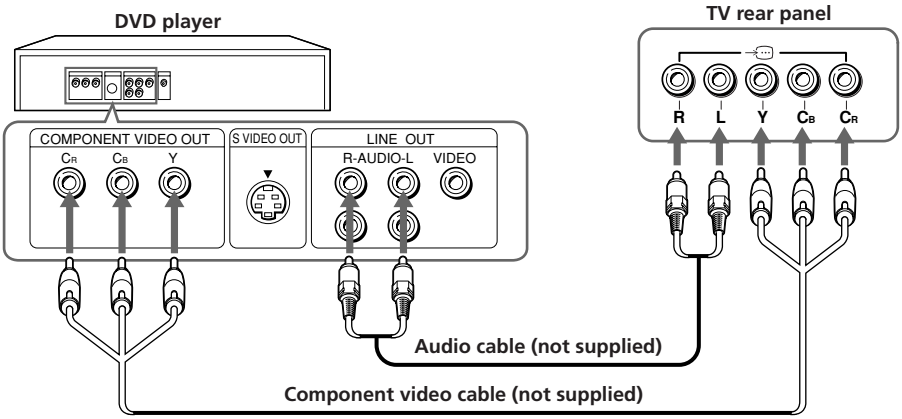


Connecting a DVD player to the component video input terminal ( )

1 Using an audio cable, connect R and L under (component video input) on your TV to the LINE OUT, AUDIO R and L output connectors on your DVD player.

2 Using a component video cable, connect Y, C_B, and C_R under (component video input) on your TV to the COMPONENT VIDEO OUT Y, C_B, and C_R output connectors on your DVD player.

3 Press DVD on the remote to watch the (component video input) and "DVD" will appear on your screen.



Notes

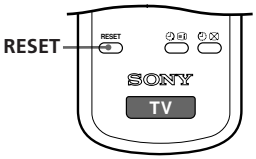
- If your DVD player can ouput interlace and progressive mode signals, select the interlace output when connecting to (component video input) on your TV. Your TV can receive either 525i/60Hz or 625i/50Hz interlace signals.
- Some DVD player terminals may be labeled differently:

Connect	To (on the DVD player)
Y (green)	Y
C_B (blue)	C_B, P_B, C_b or B-Y
C_R (red)	C_R, P_R, C_r or R-Y

- When both (S video) and (video) for 1 or 3 are connected at the same time, (S video) is automatically selected. To view (video), disconnect the S video cable.
- If you select "DVD" on your TV screen, the signal from the (monitor output) jacks will not be output properly. This does not indicate a malfunction.

Troubleshooting

If you have any problem while viewing your TV, you can either use the Reset function or check the Troubleshooting guide below. If the problem persists, contact your Sony dealer.

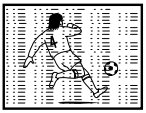


Reset function

Press the RESET button on your remote control. Your TV will go blank for about half a second then the picture will reappear with "RESET" displayed on your TV screen for about 10 seconds.

Pressing RESET will set your TV to the factory setting, but certain problems may be solved.

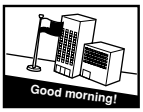
Troubleshooting guide

Symptom	Possible cause	Solutions	Page
Snowy picture  **Noisy sound**	• The connection is loose or the cable is damaged.	• Check the antenna cable and connection on the TV, VCR and at the wall.	28
	• The antenna setup is inappropriate.	• Check the antenna setup. Contact a Sony dealer for advice.	–
	• Channel presetting is inappropriate or incomplete.	• Display the "CH PRESET" menu and select "MANUAL PROGRAM" to preset the channel again.	26
	• Signal transmission is low.	• Try using a booster.	–
Distorted picture **Noisy sound**	• Broadcast signals are too strong.	• Turn off or disconnect the booster if it is in use.	–
Good picture **Noisy sound**	• The TV system setting is inappropriate.	• Display the "CH PRESET" menu and select the appropriate TV system ("TV SYS").	26

Symptom	Possible cause	Solutions	Page
No picture **No sound** 	• The power cord, antenna or VCR is not connected.	• Check the power cord, antenna and VCR connections.	28
	• The TV is not turned on.	• Press I/⏻ (power). • Press ⏻ (main power) on the TV to turn off the TV for about five seconds, then turn it on again.	9 8
Good picture **No sound** 	• The volume level is too low.	• Press + to increase the volume level.	9
	• The sound is muted.	• Press 🔇 to cancel the muting.	9
Dotted lines or stripes 	• There is local interference from cars, neon signs, hair dryers, power generators, etc.	• Do not use a hair dryer or other equipment near the TV. • Check the antenna setup. Contact a Sony dealer for advice.	– –
Double images or "ghosts" 	• Broadcast signals are reflected by nearby mountains or buildings.	• Use a highly directional antenna. • Use the fine tuning ("FINE") function.	– 27
	• The antenna setup is inappropriate.	• Check the antenna setup. Contact a Sony dealer for advice.	–
	• Use of a booster is inappropriate.	• Turn off or disconnect the booster if it is in use.	–
No color 	• The color level setting is too low.	• Display the "PICTURE" menu and select "ADJUST" of "PICTURE MODE", then adjust the "COLOR" level.	20
	• The color system setting is inappropriate.	• Display the "SETUP" menu and check the color system ("COLOR SYS") setting (usually set this to "AUTO").	23
	• The antenna setup is inappropriate.	• Check the antenna setup. Contact a Sony dealer for advice.	–

continue

continued

Symptom	Possible cause	Solutions	Page
Picture slant 	• The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV.	• Keep external speakers or other electrical equipment away from the TV. • Display the "SETUP" menu and adjust "PIC ROTATION" so that the picture position is optimal.	– 23
Abnormal color patches 	• The magnetic disturbance from external speakers or other equipment, or the direction of the earth's magnetic field may affect the TV.	• Keep external speakers or other equipment away from the TV. Do not move the TV while the TV is turned on. Press ⏻ (main power) on the TV to turn off the TV for about 15 minutes, then turn it on again to demagnetize the TV.	–
TV cannot receive stereo broadcast sound.	• The stereo reception setting is inappropriate.	• Press A/B until "AUTO" appears on the screen.	14
or	• The connection is loose or the cable is damaged.	• Check the antenna cable and connection on the TV, VCR and on the wall.	28
Stereo broadcast sound switches on and off or is distorted.	• The antenna setup is inappropriate.	• Check the antenna setup. Contact a Sony dealer for advice.	–
"100" appears at the top of the screen and there is no Teletext display.	• The channel carries no Teletext broadcast.	—	15
Teletext display is incomplete (snowy picture or double images).	• Connection is loose or the cable is damaged.	• Check the antenna cable and connection on the TV, VCR, and at the wall.	28
	• The antenna setup is inappropriate.	• Check the antenna setup. Contact a Sony dealer for advice.	–
	• Signal transmission is too low.	• Try using a booster. • Use the fine tuning ("FINE") function.	– 27
The ⏻ (standby) indicator on your TV flashes red several times after every three seconds.	• Your TV's self-diagnosis function indicates the possible problems.	• Count the number of times the ⏻ (standby) indicator flashes. Press ⏻ (main power) to turn off your TV. Contact your nearest Sony service center.	–

Symptom	Possible cause	Solutions	Page
TV cabinet creaks.	• Changes in room temperature sometimes make the TV cabinet expand or contract, causing a noise. This does not indicate a malfunction.	—	–
A small "boom" sound is heard when the TV is turned on.	• The TV's demagnetizing function is working. This does not indicate a malfunction.	—	–

■ Specifications

	KV-AR29M31	KV-AR25M31	Note
Power requirements	220-240 VAC, 50/60 Hz		
Power consumption (W)	Indicated on the rear of the TV		
Television system	B/G, I, D/K, M		
Color system	PAL, PAL 60, SECAM, NTSC3.58, NTSC4.43		
Stereo/Bilingual system	NICAM Stereo/Bilingual B/G, I; A2 Stereo/Bilingual B/G		
Teletext language	English, Arabic, French		
Channel coverage **B/G**	VHF : E2 to E12 UHF : E21 to E69 CATV : S01 to S03, S1 to S41		
	VHF : 0 to 12, 5A, 19A UHF : 28 to 69 CATV : S01 to S03, S1 to S41		Australia only
	VHF : 1 to 11 UHF : 21 to 69 CATV : S01 to S03, S1 to S41		New Zealand only
I	UHF : B21 to B68 CATV : S01 to S03, S1 to S41		
D/K	VHF : C1 to C12, R1 to R12 UHF : C13 to C57, R21 to R60 CATV : S01 to S03, S1 to S41, Z1 to Z39		
M	VHF : A2 to A13 UHF : A14 to A79 CATV : A-8 to A-2, A to W+4, W+6 to W+84		
(Antenna)	75-ohm external terminal		
Audio output (Speaker)	8W + 8W		
Number of terminal **(Video)**	Input: 4* Output: 1	Phono jacks; 1 Vp-p, 75 ohms	* Three input lines available
(Audio)	Input: 4* Output: 1	Phono jacks; 500 mVrms	* Three input lines available
(S Video)	Input: 2	Y: 1 Vp-p, 75 ohms, unbalanced, sync negative C: 0.286 Vp-p, 75 ohms	
(Component Video)	Input: 1	Phono jacks; Y: 1 Vp-p, 75 ohms, sync negative C_B: 0.7 Vp-p, 75 ohms C_R: 0.7 Vp-p, 75 ohms Audio: 500 mVrms	
(Headphone)	Output: 1	Stereo minijack	
Picture tube	29 in.	25 in.	
Tube size (cm)	72	64	Measured diagonally
Screen size (cm)	68	60	Measured diagonally
Dimensions (w/h/d, mm)	765 × 578 × 502	650 × 517 × 496	
Mass (kg)	49	39	

Design and specifications are subject to change without notice.

http://www.sony.net/

Sony Corporation